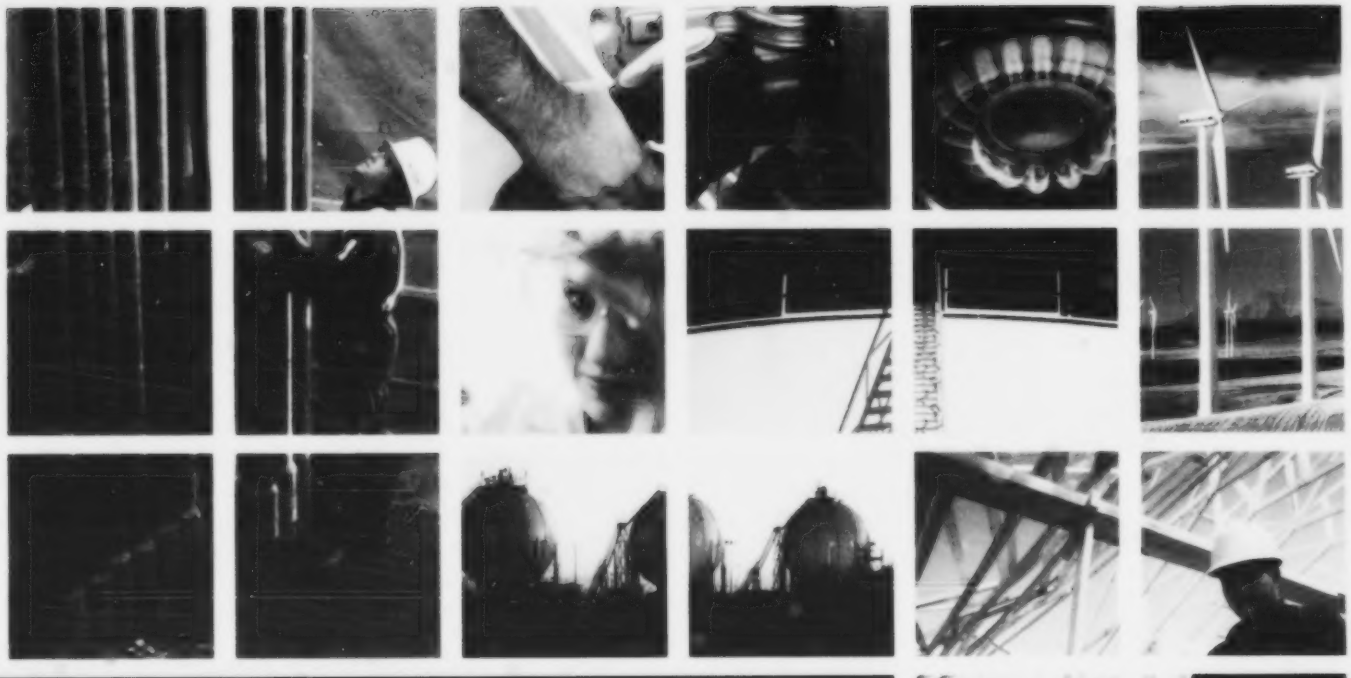
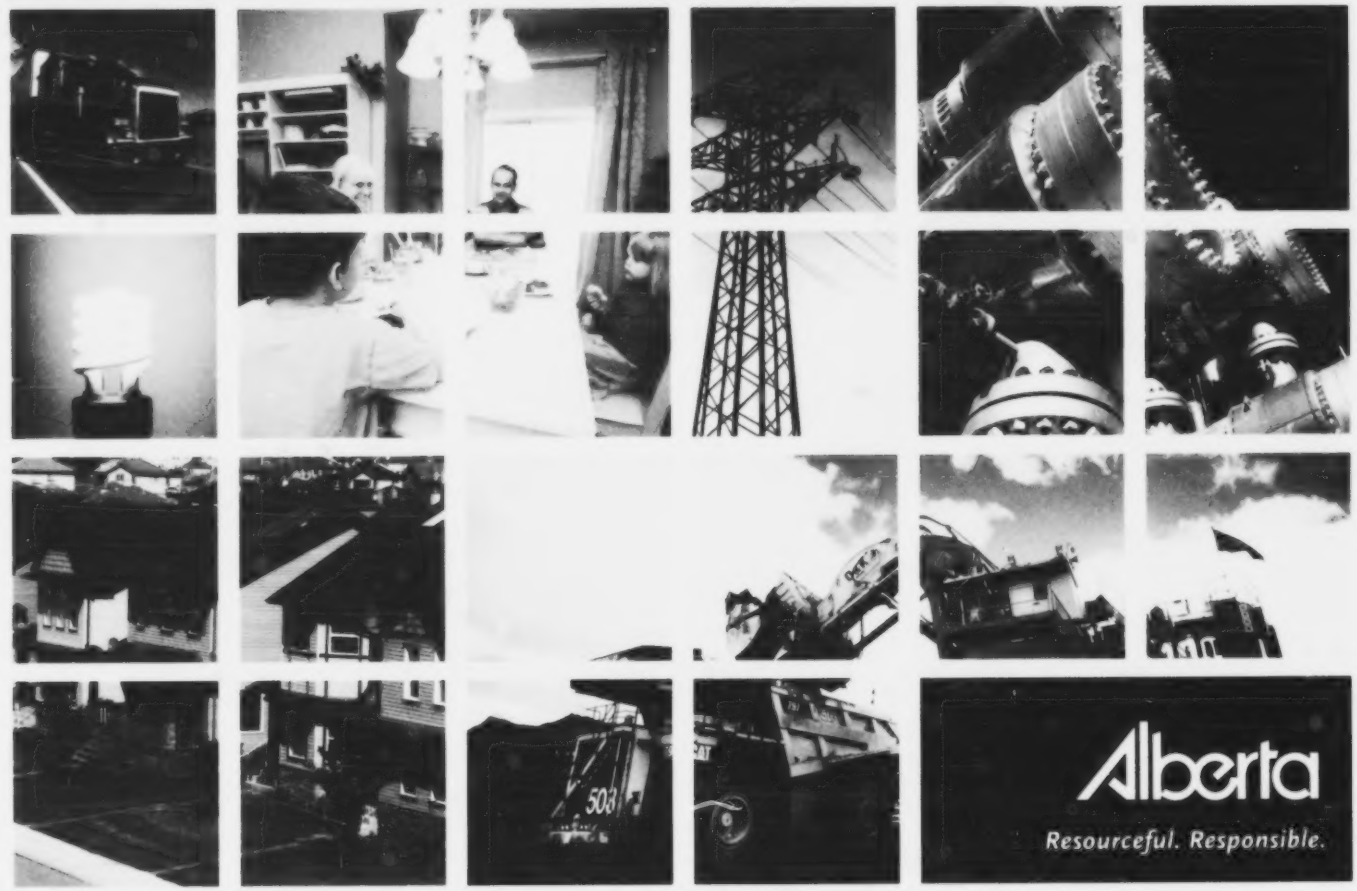


Launching Alberta's Energy Future

PROVINCIAL ENERGY STRATEGY



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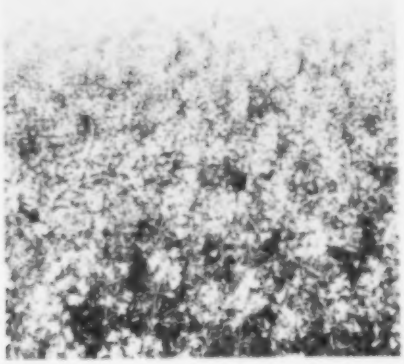
Acknowledgments

The Government of Alberta would like to thank the members of the Provincial Energy Strategy Advisory Committee. The input and expertise of the committee members was invaluable in the development of this document.

- Dr. Michael Percy, University of Alberta (Chair)
- Brendan Bell, formerly Minister of Energy and the Environment of the North West Territories
- William Gunter, formerly with the Alberta Research Council
- Robert Mansell, University of Calgary
- Clive Mather, Iogen Corporation
- Michael Raymont, LACC Group
- Lorne Taylor, formerly Environment Minister of Alberta
- Linda Van Gastel, Alberta Science and Research Authority
- Peter Watson, Deputy Minister of Energy (Ex Officio)



Message from the Minister of Energy

The Provincial Energy Strategy is a comprehensive plan for Alberta's energy future and it supports our government's priority of ensuring that our energy resources are developed in an environmentally sustainable way.

In our vision for our energy future, Alberta will remain a global leader, recognized as a responsible world-class energy supplier, an energy technology champion, a sophisticated energy consumer, and a solid global environmental citizen. To realize this vision we must act now to achieve the strategic outcomes outlined in this strategy of clean energy production, wise energy use, and sustained economic prosperity.

Clean energy production will be achieved through the application of energy technology leadership such as our government's investment in development and implementation of gasification technology and carbon capture and storage. In a world counting on energy from all sources, Alberta's advantage lies in being able to produce and consume fossil fuels in a far cleaner way, but our commitment extends to the increasing role of alternative and renewable energy.

Wise energy use will mean Albertans will not only be the champions of energy production, but also set the standard in its consumption. To achieve this we must integrate the "demand side" in our thinking, which is why we are taking energy conservation and energy efficiency measures.

Sustained economic prosperity will be built on optimizing recovery of our resources, broadening energy markets, developing and exporting our energy "know-how," and going farther along the "value-added" chain with our energy commodities. Actions we have taken to meet this objective include seeking the development of a world-class hydrocarbon processing cluster in Alberta and accepting the royalty share of bitumen production in kind in lieu of cash.

Alberta is blessed with abundant energy resources that play an essential role in the living standards and prosperity of Albertans. We must build on our success with the continued development of our energy resources in ways that are integrated and environmentally sound.

The Provincial Energy Strategy builds on our provinces strengths, addresses the challenges we face, and charts a strategic path forward to a bright energy future for Alberta.

Sincerely,

Honourable Mel Knight
Minister of Energy

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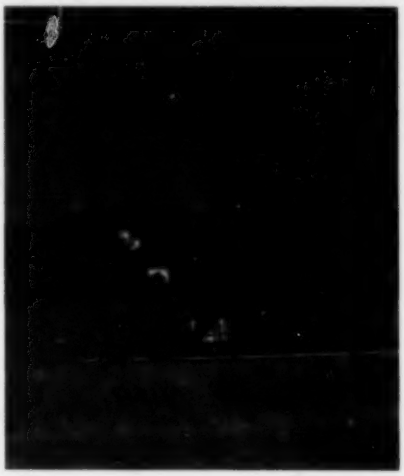

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1.1 Energy: Our Platform

Energy has underwritten the story of our province. Today in Alberta, the energy sector directly and indirectly is the single largest contributor to provincial Gross Domestic Product[1], income, employment and government revenues. It comprises more than two-thirds of our exports. Our strength in energy has helped us cultivate a strong and vibrant economy, a skilled and productive workforce, the lowest overall tax burden of any province in Canada, leadership in innovation and knowledge-based progress, an entrepreneurial and competitive business community, and a modern and efficient infrastructure. Energy has given us a lot to be proud of.

Alberta produces about five trillion cubic feet (Tcf) of natural gas, 250 million barrels of conventional oil, 500 million barrels of bitumen (a semi-solid form of crude oil) and, from 11 different mines, more than 30 million tonnes of coal each year.

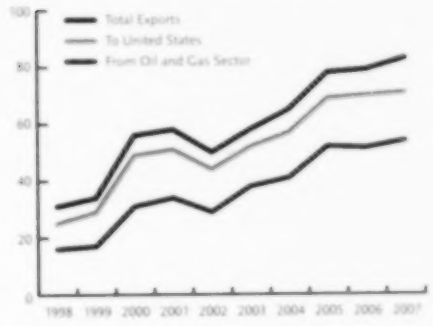
Energy has given us a lot to be proud of.

Keep in mind that innovative Albertans have in the last two decades managed to extend established reserves of oil and gas approximately in tandem with production. In other words, there may still be dozens of years more of oil and gas to drill. We have an extensive pipeline infrastructure and a thriving petrochemicals sector. We have shown leadership in renewable energy development, including hydro, wind and biomass. Our electrical generation capacity is more than 12,000 megawatts, with demand growing at twice the rate of the rest of Canada.

Albertans have controlled the bulk of their energy resources since 1930. Many Albertans are employed directly in the energy industry. Others are not, but they still owe their livelihood to the sector. Alberta's Aboriginal and Metis communities have a special role in the energy picture. All of us are energy consumers. Energy development has enjoyed a close connection with Alberta communities. What we see today, all around us, is a platform for our energy future.

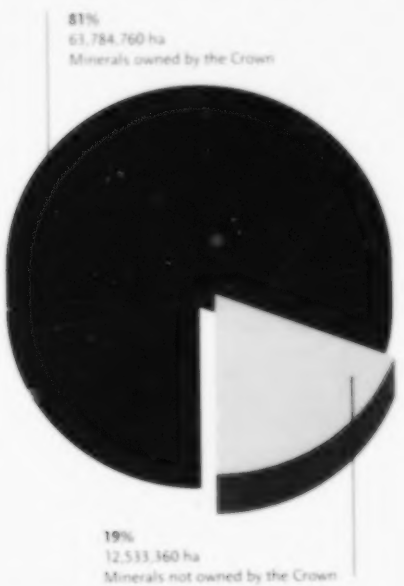
How we will define that future is the question we must now answer.

International Merchandise Exports from Alberta, 1998 to 2007 ($ billions)



Source: Industry Canada, Trade Data Online

Ownership of minerals in Alberta

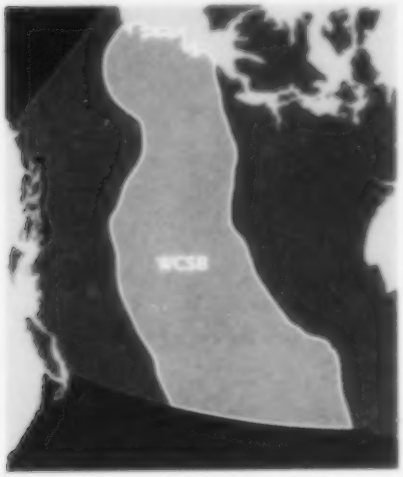


Source: Energy Resources Conservation Board

1 GDP is a key measurement of economic activity and defined as the total value of goods and services produced.

1.2 The Basin

Western Canada Sedimentary Basin

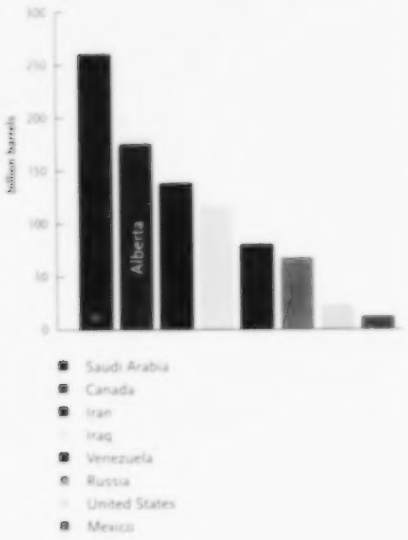


Our energy story starts with the formation of the Western Canada Sedimentary Basin (WCSB), a massive wedge of rock underlying northeastern B.C., western North West Territories, most of Alberta, southern Saskatchewan and southwestern Manitoba. Created over hundreds of millions of years, the basin rock is about six kilometres thick at its western extent, thinning gradually to the east.

We call it "sedimentary" because it is old sea bottom: it accumulated through the settling of water-borne sediments. Its layers gradually hardened with the pressure of overlying rock, trapping decayed organic materials that eventually became "fossil fuels:" coal, oil, bitumen and gas. The deepest layers of the basin are more than 500 million years old. The fossil fuels we consume today are essentially storage vessels for solar energy; they started out as plant and animal matter whose life cycles were nourished by the sun's light and warmth over millennia.

Energy also makes a substantial contribution to the economies of neighbouring B.C. and Saskatchewan, but of the jurisdictions that sit over top of the WCSB today, Alberta is uniquely blessed. We preside over most of the basin's oil and gas and coal reserves and almost all of its bitumen. Alberta's first peoples knew well of the outcrops of black rock, of groundwater that lit on fire, and of oily seepages that occasionally surfaced on the landscape. The Cree and Dene used bitumen to waterproof their canoes. Early-arriving Europeans, including fur trader Alexander MacKenzie, mapmaker David Thompson, and geologist Dr. George Dawson, took note.

Proven World Crude Oil Reserves



A natural gas find was recorded near Medicine Hat along the Canadian Pacific Railway line in 1883, when a well meant for water produced gas instead: the escaping gas ignited, destroying the drilling rig. In what is now Waterton Lakes National Park, a successful oil well was drilled in 1902. The prolific "Old Glory" discovery gas well was drilled in 1909 at Bow Island, and the industry took on feverish dimensions when wet gas and oil were discovered at Turner Valley in 1914. A blow-out that burned for three straight weeks in 1924 confirmed the area as an oil producing centre. After mineral resource ownership was transferred from Ottawa in 1930, Alberta took leadership in matters of resource conservation that in the decades following set the standard for jurisdictions worldwide.

Imperial Oil's oil strike near Leduc in 1947 helped people begin to realize the global scale of our resource. A massive blow-out on Leduc #3 commanded world media attention for six months in 1948, permanently connecting the words "oil" and "Alberta." In 1958 another substantial milestone was reached when piped western Canadian gas arrived in Toronto; the Trans-Canada pipeline was the longest pipeline in the world until the 1980s.

Conventional oil production peaked in Alberta in the 1970s and conventional gas production has now also peaked. But the resources of the WCSB have impressive diversity. Technology, commodity prices and escalating global demand are combining to extend our relationship with fossil fuels by allowing us to tap "unconventional" resources. Building on pioneering work in the 1920s by Dr. Karl Clark at the Alberta Research Council, the Alberta Oil Sands Technology

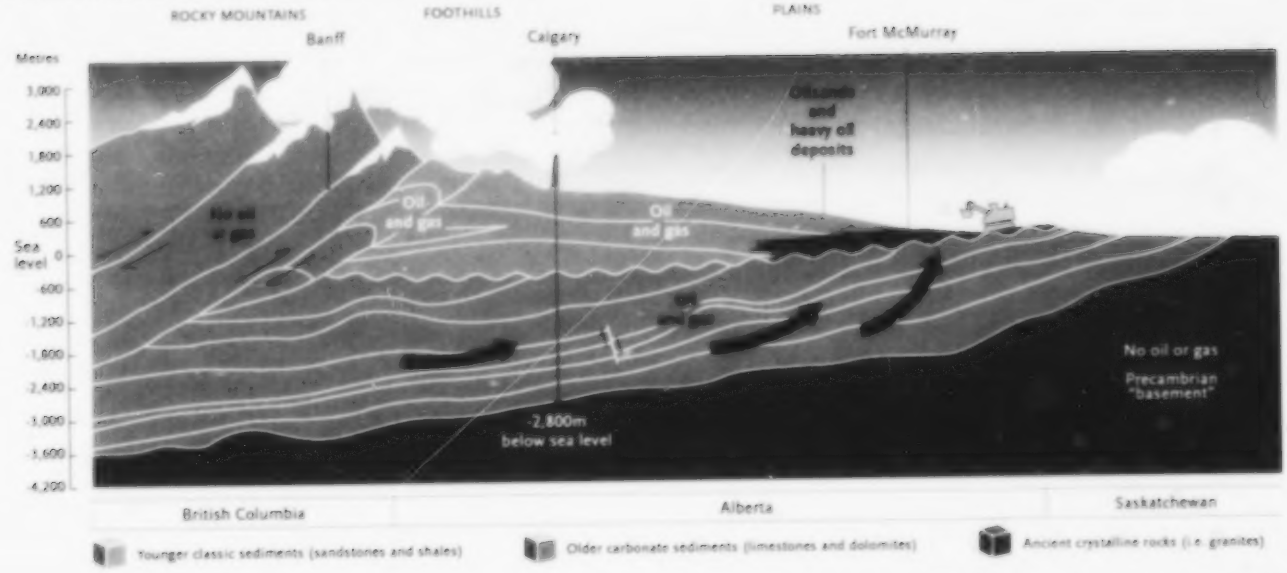
and Research Authority (AOSTRA) was created in 1974 to promote the development and use of new technology for oil sands and heavy oil production. For a multi-year expenditure that came in under $1 billion in total, we learned how to economically extract bitumen from our mammoth deposits. Many hundreds of billions of dollars of private investment have followed. More recently, we have made striking advancements making it economic to extract "unconventional gas" – such as natural gas from coal, natural gas from shale layers and natural gas from tight (and previously uneconomic) pockets in the ground. Unconventional gas may be recoverable in quantities that are a multiple of our original conventional gas reserves.

The progress we have experienced has not been continuous. Alberta has surmounted many, many obstacles over the years, including regulatory and ownership hurdles, protectionist sentiment, nationalization, economic recessions, wars, environmental threats, cyclical price downturns, skill and labour shortages, exploration disappointments, and the trials and tribulations of research.

As we look to the future, Alberta must continue to be nimble—responding to challenges, and taking the long-term approach to capitalize on opportunities. Success as we taste it in Alberta today is sweet, but it has been hard-earned. Tomorrow's challenges will be no different.

Imperial Oil's oil strike near Leduc in 1947 helped people begin to realize the global scale of our resource.

Western Canada Sedimentary Basin Cross-section



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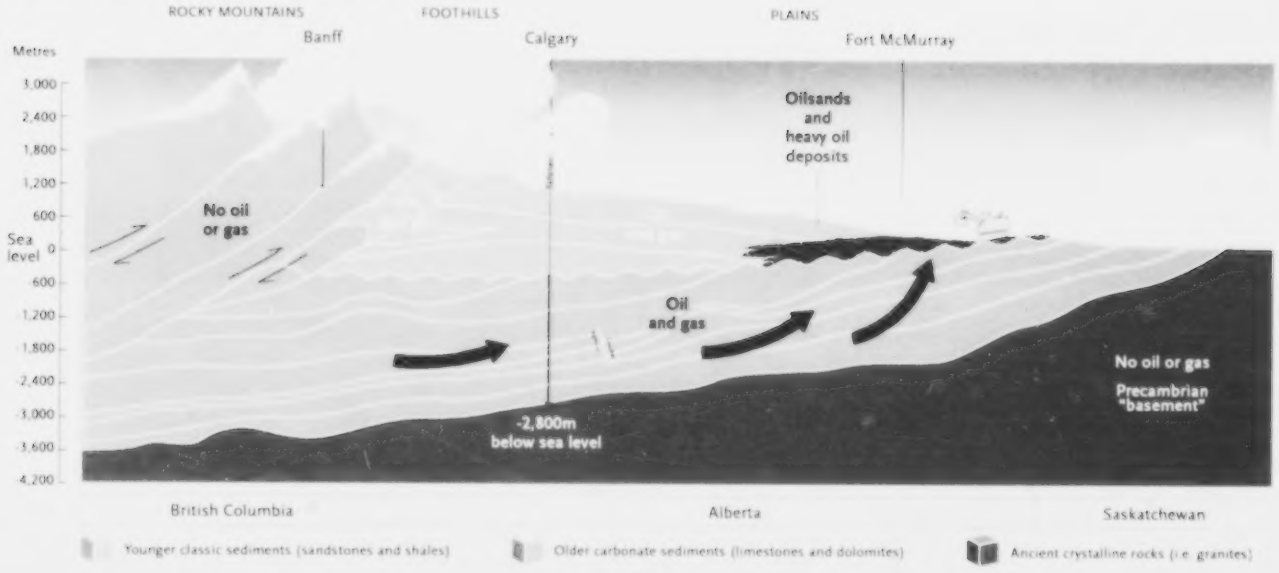


1.3 Fossil Fuels

The basin's resource diversity has afforded us the opportunity to sustain wealth generation for a century now. How are these assets holding up?

Unconventional gas offers us the potential to extend production of this valuable resource, the cleanest burning of the fossil fuels, well into the future.

Natural Gas

Alberta is today the world's second largest exporter of natural gas and its fourth largest producer. We supply the United States with more than half of its gas imports. Natural gas is also the main contributor of provincial energy royalties. Conventional production peaked in 2001, but some of the decline has been offset by recovery of "unconventional gas," mainly natural gas from coal (known as coalbed methane) thus far. Unconventional gas offers us the potential to extend production of this valuable resource, the cleanest burning of the fossil fuels, well into the future. There is huge potential for tight and shale gas in Alberta, as well as natural gas from coal. New technology will be required to make the most of it.

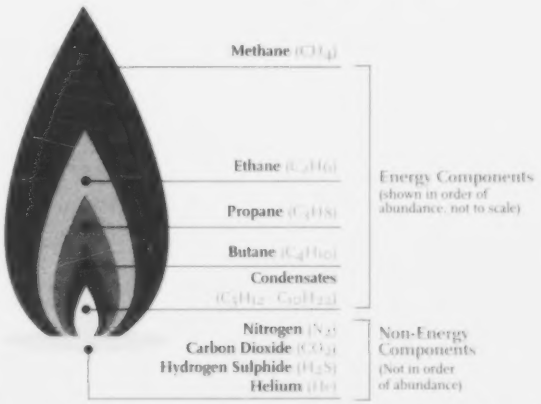


Image based on information from the Centre for Energy Research.

Conventional Oil

Alberta still leads the country in conventional oil reserves, with 39% of the Canadian total. To continue the production of conventional light oil, industry is searching for remaining undiscovered pools, drilling infill oil wells, and redeveloping existing pools using enhanced oil recovery (EOR) techniques such as waterfloods and carbon dioxide injection, which increase reservoir pressure permitting greater extraction. Currently, only about 27% of light oil is recovered in Alberta, suggesting there is still plenty in the ground awaiting improved

Reserves and Production Summary, 2007

The following table summarizes Alberta's energy reserves at the end of 2007.

	Crude Bitumen		Crude Oil		Natural Gas[a]		Raw Coal	
Measured in:	million cubic meters	billion barrels	million cubic meters	billion cubic meters	billion cubic meters	trillion cubic feet	billion tonnes	billion tons
Initial in Place	271,993	1,712	10,532	66.3	8,700	309	94	103
Initial Established	28,392	179	2,751	17.3	4,923	175	35	38
Cumulative Production	944	5.9	2,511	15.8	3,829	136	1.34	1.48
Remaining Established	27,448	173	241	1.5	1,094	39[b]	34	37
Annual Production	76.6	0.482	30.4	0.191	135	4.8	0.037	0.041
Ultimate Potential (recoverable)	50,000	315	3,130	19.7	6,276[c]	223[c]	620	683

a Includes coalbed methane (CBM). Expressed as "as-is" gas.
b Measured at field gate (or 36.8 trillion cubic feet downstream of straddle plant)
c Does not include CBM

technology or improved prices. To produce more conventional heavy oil, industry is exploring new zones in undrilled portions of the basin, or applying EOR schemes such as waterfloods, thermal projects, and miscible floods. Only 15% of heavy oil is currently being recovered. With massive quantities of light and heavy oil still available to be tapped, one could say there is truly another Alberta lying beneath our feet.

Bitumen

The reserves of our three major oil sands areas – Athabasca, Cold Lake and Peace River – dwarf those of the conventional oil fields. The oil sands contain 173 billion barrels of economically recoverable crude bitumen (approximately 10% of the mineral deposit), a volume that, when confirmed in 2006, vaulted Canada into second place behind Saudi Arabia in global proven reserves. If we add our bitumen reserves to our reserves of conventional crude, Alberta's borders contain more than 98% of total Canadian oil reserves – about 13% of global proved reserves.

Oil sands are a mixture of sand, clay, water and bitumen. Sitting beneath 141,000 square kilometres of northern Alberta, they are much less expensive to locate than conventional oil, but they are costlier to produce. We began commercial production by surface-mining these deposits and we are now recovering deeper bitumen by heating the oil sands and drawing bitumen up wells to the surface – a process called "thermal in-situ recovery." Ultimately, 80% of the bitumen will be developed via the in-situ process which has a significantly smaller footprint on the landscape than strip mining.

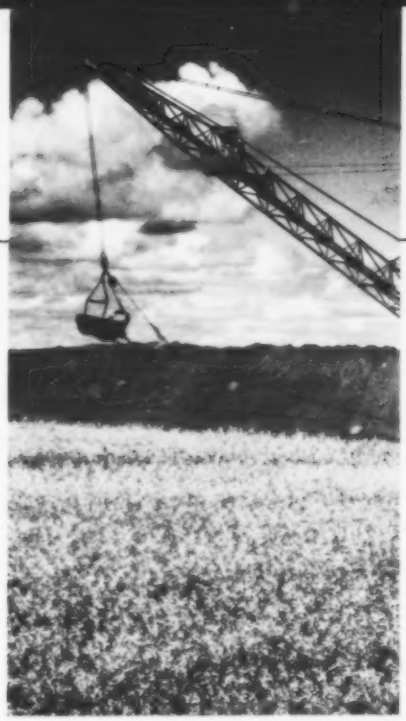
With the dramatic rise in oil prices in recent years, oil sands activity has grown quickly. Materials and labour have emerged as significant limiting factors to the pace of growth. With that growth in activity has come an increased environmental focus. Much of that has focused on the significant amounts of water and energy— with its resultant emissions—used to recover and process bitumen. Strip mining and tailing ponds create environmental pressures for the landscape and watershed. These remain critical issues that must be addressed in the years to come by industry, government and the research and technology sector.

Generalized Areas of Oil Resources

Source: Energy Resources Conservation Board and Alberta Geological Survey

Coal

The WCSB contains about 90% of Canada's usable coal resources. Alberta sits on about 70% of Canadian reserves, much of it low in sulphur. Make no mistake; the oil sands are big, but Alberta's coal reserves contain more than twice the energy of all the province's other non-renewable energy resources.



Coal in Alberta is generally low in sulphur and therefore burns cleaner than coal found elsewhere around the world. This lower sulpher coal is consumed here at home for electricity generation, where coal is the main fuel for our power grid. About a third of Alberta's usable coal is "bituminous," attractive as coking feedstock[2] and thus shipped to areas of concentrated heavy industries in Asia and elsewhere. At current production levels, our reserves will last for hundreds of years.

Despite its abundance, coal is not without its challenges to be addressed. The phrase "clean coal" is heard a lot these days, and even while boasting some of the most technologically advanced coal-fired electricity plants in Canada, there remain significant opportunities for Alberta to lead growth in advancing this technology.

Carbon dioxide (CO_2) emissions are a central issue of coal-fired generation, but there are other emissions that can affect Alberta's air quality—despite the fact that Alberta is a leader in managing air emissions from coal-fired generation. The electricity we consume in our homes and workplaces is a big part of the standard of living we enjoy, but when it comes to coal, there are huge opportunities for Alberta to pursue cleaner methods to generate that power.

1.4 Beyond Fossil Fuels

Gas, oil, bitumen and coal owe their energy content to the sun—a pretty old energy source. They exist on earth in finite quantities, thus earning the designation "non-renewable." Once they are used up, they are gone.

Nuclear energy, dependent on mined uranium, is one alternative to fossil fuels. Uranium is still plentiful globally, however issues include waste management and environmental, health, safety, and social concerns. Nuclear has experienced resurgence as the world attempts to reduce its CO_2 emissions. Some synergistic applications involving bitumen processing may be available. Alberta is currently examining the merits and challenges of nuclear power.

Then there are "renewables." Alberta has a wealth of renewable biomass feedstock in the forestry and agriculture sector that will drive considerable production of low-carbon transportation fuels and power generation. We have long benefited from power generated by hydroelectric dams. Wind, wave, tidal, solar, geothermal, biomass, biogas and run-of-river hydro have increased their presence on the global scene. These are seen to be cleaner, more sustainable sources of energy—although not entirely without environmental impact.

Until recently they were also more expensive, but the rising prices of fossil fuels have leveled the playing field considerably. Renewables are growing off a very small base, but their viability is improving and innovation is percolating. As such, they have the potential to become a significant part of the global energy mix this century, but based on demand here in Alberta and globally, they cannot entirely replace fossil fuels any time soon. Alberta's development and use of renewables will help in reducing greenhouse gas emissions, enhance Alberta's diversity of energy supply, stimulate regional activity, and fortify collaboration across industry sectors.

2 Bituminous coal has a high carbon content and can be processed (coked) by a prepartion plant to meet requirements for applications such as the manufacturing of steel.

An additional—and very real—category of energy that must be mentioned is saved energy. Energy not consumed is energy that can be used productively elsewhere. Energy savings contribute to ensuring adequate and efficient supply for all Albertans, while at the same time, reducing incremental emissions. Legislation is being prepared in Alberta to advance energy efficiency and conservation and to help educate Albertans on the benefits of both.

Each source of energy brings challenges with it. The consensus seems to be that in the future the world will need to maximize the provision of energy from all sources—fossil fuels and the rest—in order to satisfy our growing needs. Alberta will have a role to play in helping to keep global energy markets in balance.

1.5 Electricity: Facilitator of Prosperity

Electricity is not pumped out of the ground, hence the tag "secondary" energy source. But it plays an essential role in the living standards and prosperity of Albertans. Simply put, when they flick the switch, Albertans expect the lights to come on.

About 21,000 kilometres of transmission lines cross the province, delivering electricity generated from coal, gas, hydro, wind and other renewables to homes, offices, plants and other facilities. Power in Alberta is supplied under a different market system than in other provinces in that the generation and retail sale of electricity are open to competition. Wholesale power is an $8-billion market in Alberta.

Power consumption has been growing at an annual pace exceeding 3%, a function of population growth as well as today's more power-intensive lifestyles. But it has been more than 20 years since the backbone of the Alberta transmission system between Edmonton and Calgary was reinforced. By 2027, we will need twice the power we currently consume.

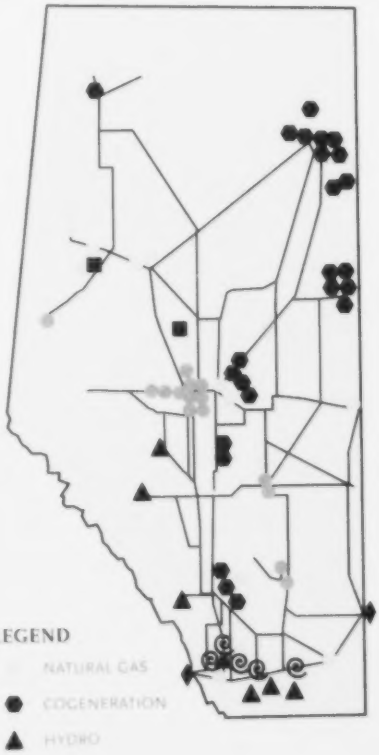
Generation sources are becoming more diverse as renewable energy grows, testing the grid in new ways and creating pressures not experienced before. Our system also remains one of the least "interconnected" in the country with limited capacity to either import or export electricity when necessary to maintain the integrity of the grid. This creates challenges for safety, reliability and affordability. Our electricity system will play a large role in delivering more and cleaner energy to Albertans in years to come.

1.6 The Canadian Energy Picture

According to 2005 figures, Canada is among the top five energy producing nations in the world, thanks in large part to Alberta's petroleum industry. Canada produces a lot more energy than the nation consumes, and the resulting exports drive much of our country's economic wealth.

In 2007, Canada's energy industry accounted for 5.6% of national GDP and directly employed 372,200 people (2.2% of the Canadian labour force). Energy export revenue totaled $90 billion, which accounted for about 20% of the value of

Transmission/Generation



all exports. This proportion has held steady for the last three years, with energy playing twice the role in Canada's exports that it did in the 1990s.

As one of the most important sources for U.S. energy imports, Canada is well positioned to play an increasing role in America's goal to gain independence from overseas oil imports. This is key as neither Alberta nor Canada can operate as an island in North America's integrated energy market.

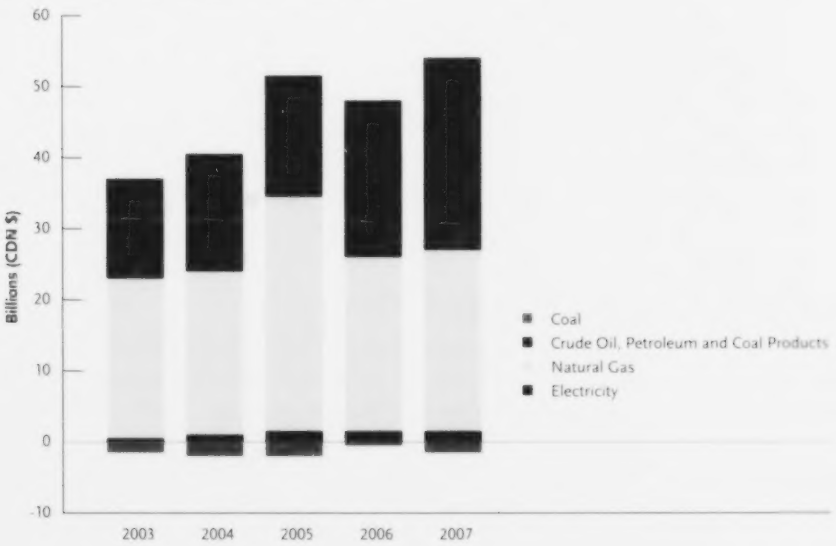
As this strategy clearly outlines, Alberta fits prominently into Canada's energy picture. The development of Alberta's energy resources—and the demand for those energy resources—provides enormous economic advantages that reach well beyond the province's borders.

Growth in Alberta's energy sector has significantly increased the demand for goods and services from other provinces creating jobs throughout the country and significant tax revenues for the federal and provincial governments. In addition, Alberta's resources provide Canada with energy security and the potential to be energy self-sufficient.

While Canadian law is very clear that the province has jurisdiction over the development of its natural resources, the province has a responsibility to work with the federal government to ensure that any national legislation or policy does not negatively impede Alberta's responsible development of energy. This includes seeking alignment between provincial and federal policies, such as those on climate change.

Alberta must ensure that national policies take into account our unique position as an energy providing jurisdiction and a key driver of the nation's economy.

Net Energy Export Revenues, 2003-2007



Source: Stats Canada, NEB

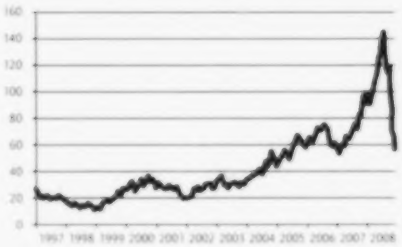
1.7 The World Energy Picture

The price of a litre of gasoline or a kilowatt-hour of electricity is derived primarily by the supply-demand balance of the underlying commodity. World energy demand has grown at a steady pace in the last three decades and that growth is now accelerating as consumption rises in populous developing nations including China and India. At the same time, global energy supply has become more problematic. Issues of technology, geology, politics, access and environment stand in the way of an assured, continuing flow of energy from traditional sources.

We see the effects of these supply-demand imbalances in rising prices. Over the last decade, the price of natural gas has experienced a structural upwards shift. Oil, which was about US $15 at the turn of the millennium, went over US $100/barrel earlier this year and kept climbing before its recent pullback. Even the price of coal, one of the world's readiest energy sources, has more than tripled as manufacturing industries in previously rural economies have taken off.

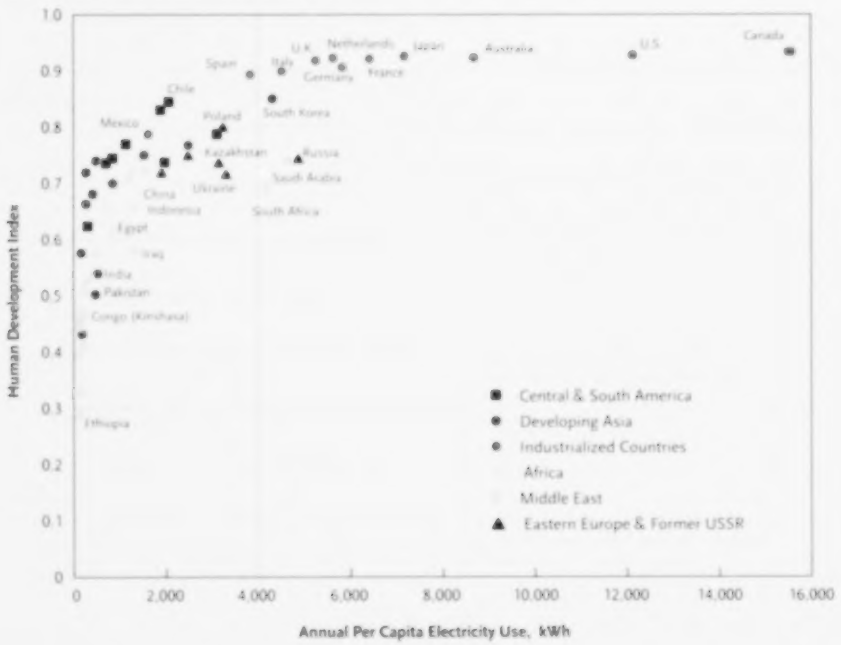
We should not forget the potential of energy to address disease, poverty, illiteracy and, ironically, the environment. There is a positive correlation between energy use and human development. Provision of pumped well water, natural gas for cooking, or power for lighting can spur fundamental shifts toward the more equitable, more compassionate world in which most of us want to live. Greater energy production capacity will be required to sustain the improvement occurring in living standards in developing nations, as well as to enable technologies directed at environmental protection.

Average Price of West Texas Intermediate Crude Oil ($US per barrel)



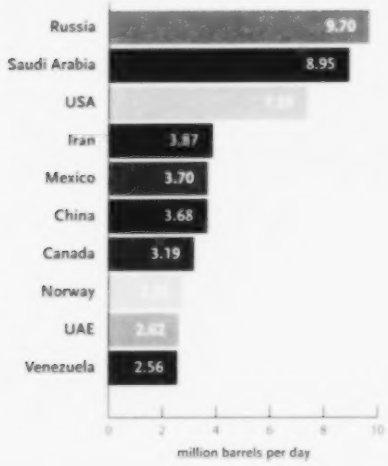
Source: US Energy Information Agency

Human development and energy



Source: Physics Today: The Energy Challenge (2006).

Global Oil Production

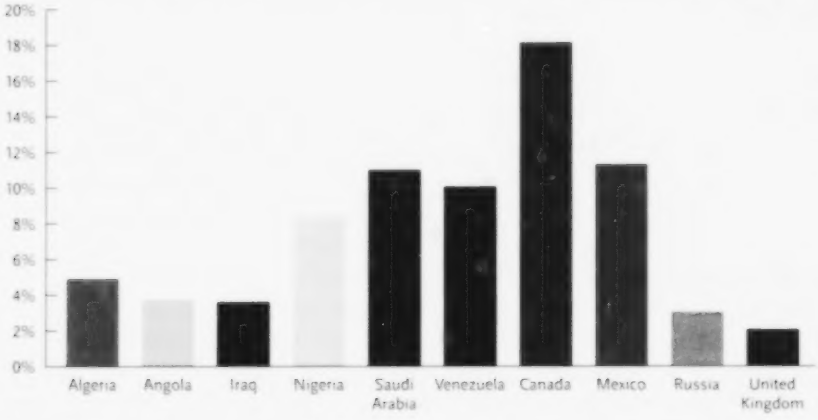


Source: Tankers International

At home in Alberta, energy also supports community development and prosperity. Many Albertans and Alberta communities owe their livelihood and economic success, either directly or indirectly, to oil and gas development.

Alberta's main global impact is on the supply side. We preside over immense energy resources, we are located adjacent to the U.S.—the world's largest consumer of energy—and we offer a level of stability and security that is rare given the all-too-exciting geopolitical conditions worldwide. We have earned a place of respectability—and responsibility—on the global energy scene.

Top 10 Countries Providing U.S. Imports Of Crude Oil And Petroleum Products



Source: US Energy Information Agency 2007

1.8 Bringing It Home

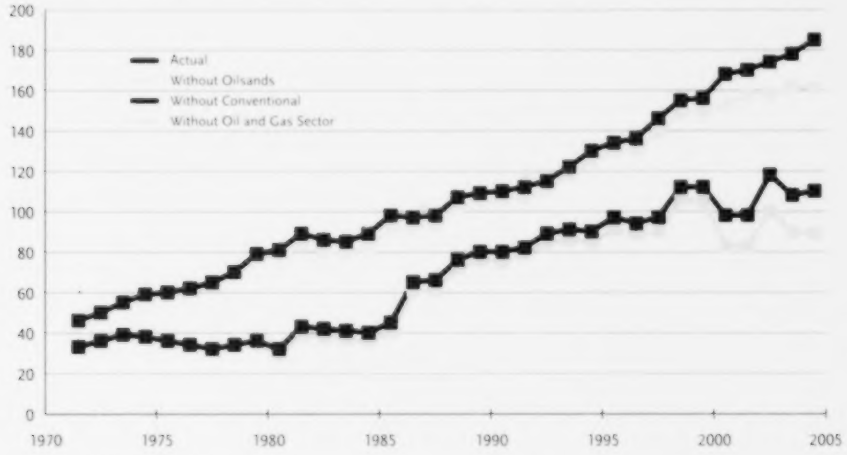
Our energy sector continues to deliver wealth. Alberta has been, on a per capita basis, by far the largest net federal fiscal contributor since 1962, to the benefit of the other regions of Canada. Our GDP product on a per-person basis is the highest among provinces and fully 70% higher than the average for the rest of Canada. A study undertaken at the University of Calgary (see figure below) suggests that our economy without the impact of oil and gas would be barely recognizable—less than half its current size. Energy has allowed Alberta to become a substantial and growing engine, propelling the national economy.

While all fossil fuel development has contributed to Alberta's current position of strength, investment in Alberta's conventional oil and gas industry still dominates total Canadian oil and gas investment. But it is the oil sands that are beginning to have what can be described as a transformative impact on our economy. Construction activities in the oil sands have triggered an unprecedented investment boom. Representing the majority of major Alberta project investment, these are long-term, multi-billion dollar projects—many of which are already well into planning or even construction.

In a few years' time, when the majority of the oil sands plants move into operation, an enormous continuing demand for goods and services will be spawned. The

oil sands plants will require more labour on a more sustained basis than the conventional oil and gas sector. Their impact on employment, demand for goods and services, provincial tax and royalty revenues will be substantial. Of note, according to a Canadian Energy Research Institute report, more revenues from oil sands operations will be received by the Canadian federal government than the Government of Alberta over a 20-year period.[3]

Impact of oil and gas on Alberta GDP



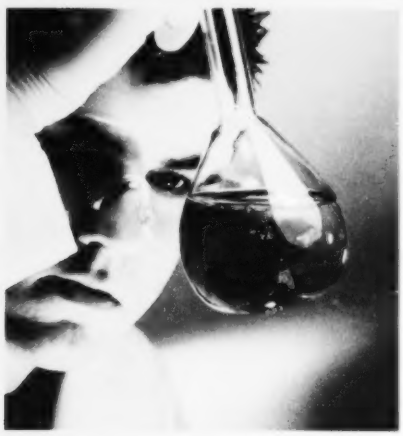
Source: University of Calgary

Energy prices historically have tended to be volatile and cyclical, driven by forces outside the control of Albertans. While we cannot neutralize the periodic booms and busts that characterize this sector, there are some things *we can do*, secure in the knowledge of the attractive long-term prospects of the industry. Government policy must be driven by this long-term focus. As the industry confronts issues related to climate change, skill shortages and infrastructure, a sustained vision by government becomes all the more important, if not critical.

For Alberta in the coming 30 years, no other activities will have the scale or impact of energy development. Agriculture and other sectors are important to Alberta and diversification is good for us, but energy's impact is pervasive. It is, and will be, our province's dominant economic engine. Now is the time for Alberta to be proactive on pursuing innovative energy development and environmental protection to help ensure the long-term economic prosperity of the province.

For Alberta in the coming 30 years, no other activities will have the scale or impact of energy development.

3 Canadian Energy Research Institute. Economic Impacts of Alberta's Oil Sands, October 2005



We need technology more than ever today to keep our energy industry competitive and sustainable.

1.9 Challenges Ahead of Us

Traditionally, the energy challenges Alberta has faced have included making sure we have a secure supply for ourselves, offering competitive exports for our economic benefit, and taking care of our environment. Relative to comparable jurisdictions, we have excelled in these areas. In the future, our challenges will still boil down to these fundamental three. But the dimensions of the challenges will take on greater complexity. Here are a few of the dimensions we will need to pay particular attention to:

Climate change. We are entering a future where emissions of carbon into the atmosphere will be constrained. Although we have made some progress in lowering the "carbon intensity" of energy production, carbon emissions are still more or less attached at the hip to fossil fuels. Because the world will continue to need fossil fuels, we will need to find cleaner ways to produce and consume fossil fuels. Alberta's oil sands for example, while they account for just four per cent of Canada's greenhouse gas emissions and less than one tenth of one per cent of all global greenhouse gases, are a large fossil fuel resource and therefore provide a tremendous responsibility and opportunity for Alberta to lead.

Global markets. The United States has long been our central destination for energy exports. Americans are excellent customers. But the U.S. no longer enjoys uncontested dominance in the world's economy. China and India want our energy supplies, too. Alberta has opportunities to reduce our singular dependence on the U.S. market – and improve our bargaining power – by cultivating additional markets.

Technology. Innovation in the energy sector is most apparent when near-term benefits can be achieved through incremental change. The timeframe demanded for payback is not consistent with some of the high risk, long-term innovations we must develop to solve our energy challenges. We must move the results of our research through technology development and commercialization to full-scale commercial deployment in order to see our energy research investments pay economic and social dividends. Specifically, that will involve pursuing applied research that will enable us to solve the challenge and the practical issues our province is facing now. There is, consequently, a new and needed role for government in the "innovation supply chain." We need technology more than ever today to keep our energy industry competitive and sustainable. With all the challenges now lining up for technology solutions, a concerted effort by industry and government is required.

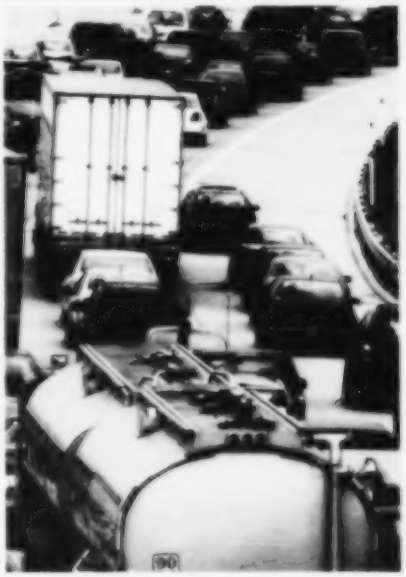
Adding value. Oil and gas has spawned some diversification in Alberta, including development of our financial and telecommunications sectors. Alberta has grown a petrochemical sector, and while it is the largest in Canada, it cannot yet be described as world leading. How can we add more economic value? Carefully planned upgrading and refining capacity provides options for realistically adding value to fossil fuels while contributing to cleaner energy. This provides even greater reason to encourage additional investments that will see more of Alberta's products advance up the energy value chain.

Labour. The energy sector has endured periods where it was not among students' top choices when it came to choosing careers. This is unfortunate and must be addressed given that Alberta's future will be shaped around energy. We need to bring more people into the industry at all levels in order to fully tap the opportunities in years to come.

Energy use. As a resource-rich province we have often considered development before energy efficiency or conservation. But times are changing. More than two-thirds of the energy from a lump of coal is consumed or wasted before the resulting electricity actually enters our households. The efficiency we experience by burning a litre of gasoline in our cars or lawnmowers—following the chain of processing it undergoes from crude oil—is even worse. The way we use energy leaves a lot to be desired: we drive long distances on congested roadways to work; we leave lights on or fail to stem the quiet energy consumption of electrical devices such as phones, televisions and computers; we inadequately insulate our homes.

The majority of global emissions result from the consumption, rather than the development, of energy. The U.S., for example, is not among the top energy producers globally; nevertheless it leads all nations in emissions. Managing the demand side of energy use may cut consumption by as much as one-third. The importance of stemming emissions is bringing our energy consumption patterns squarely into the spotlight.

Awareness and understanding. A better informed debate on our energy sector—both outside and within our boundaries—stands to benefit Alberta. Misunderstandings risk actions with potential to harm our province's economic advantage and dramatically impact the quality of life Albertans have come to expect. We need to connect fully with our customers on steps we are taking to "produce energy better." Now is the time to move past the platitudes towards a fully informed debate.



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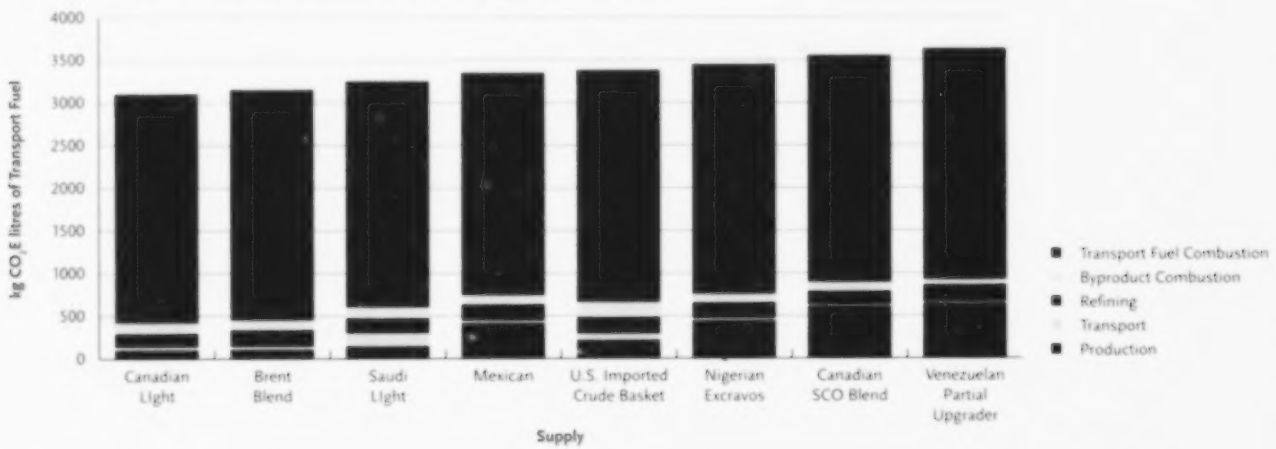
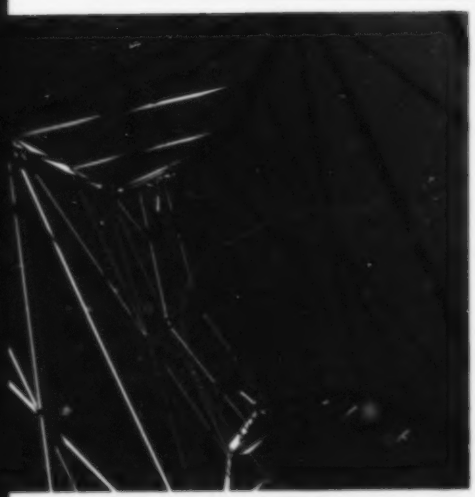
Production to Consumption: Greenhouse gas life cycle estimates



Source: "Typical Heavy Crude and Bitumen Derivative Greenhouse Gas Life Cycles in 2005" (T. J. McCann and Associates)



2.1 Sustainable Prosperity

Alberta can take the initiative to lead toward a better, brighter future. This is the path that allows Alberta to not only respond to "issues" but take full advantage of the opportunities. We have taken this path in the past when it has been needed. We believe that it is needed again. Around the world, economies are either proactively managing the new realities, or being managed by them. Alberta has the wherewithal to leverage its current position and prepare for what is coming. This is the path of enlightened self-interest. Notwithstanding the diversity of views on climate change and its causes, it is clearly in Alberta's and Canada's economic interest to manage its energy future and carbon better. We can build on our strengths, address our challenges and pursue a *strategic* approach.

In the end, this path will allow us to move beyond viewing the challenges as the costs of continuing our growth. It will pave the way to sustained wealth creation, while safeguarding our environment and our social advantages for future generations of Albertans. Ultimately, the market will still decide. But the "Sustainable Prosperity" path will allow us to play a significant proactive role in our own future – and to demonstrate leadership and exert our fullest influence on the world stage.

The price, of course, is courage.

2.2 Our Energy Vision

Courage starts with vision. Everything about our past and present, and everything we know about the future, points out that Alberta should aspire to be:

A global energy leader, recognized as a responsible world-class energy supplier, an energy technology champion, a sophisticated energy consumer, and a solid global environmental citizen.

2.3 Critical Assertions

This energy strategy reflects the resourceful and responsible approach Alberta will take toward the long-term development of energy in our province. The following assertions represent fundamental guideposts of that direction:

1. The development of clean hydrocarbons is essential to Alberta's energy future.

The world's fossil fuel supply remains plentiful, but in a carbon-constrained world we must find methods to develop and consume fossil fuels in an environmentally responsible way, and this must be Alberta's responsibility and focus. Alternative and renewable energy sources will play a growing role in Alberta energy's future, but they cannot match the importance to Alberta of "clean" fossil fuels.

2. Ongoing development of Alberta's energy resources will be a platform for continued economic growth and success.

Alberta's energy future is also about revenues, value-added activity and sustainable jobs for Albertans and Canadians. An important benefit of the energy strategy is that it will lead to a future of long-term prosperity, continuing to drive job and wealth creation across Canada and providing value to Albertans as resource owners.

3. Alberta's energy future will properly account for cumulative effects to the environment and greenhouse gas emissions.

This strategy recognizes that developing Alberta's energy resources involves more than the need for specialized equipment and skilled labour – that the impacts of development are often more than simply dollars and cents. Decisions associated with energy production and consumption must ultimately take into account cumulative environmental impacts, including greenhouse gas emissions, and impacts to land, air and water.

4. Alberta will invest in energy infrastructure, including policy development and energy research.

Investment in infrastructure is integral to Alberta's energy future. Investment means funding for tangible infrastructure and it also refers to investing time and effort on policies, regulations and institutional capacity that promote and ensure the development and deployment of new technologies that increase efficiency and reduce environmental impact.

5. *Government will encourage energy efficiency and conservation at all levels.*

From individuals to industry, all Albertans must play a role in using and consuming energy in a responsible manner. Energy resources should be consumed with an emphasis on efficiency, conservation and wise use. We all have a role to play, and the impact that individuals make through personal choices should never be underestimated – be it green buildings, cleaner transportation, efficient appliances, heating and lighting or outright conservation.

6. *Alberta will build on success.*

Alberta's energy future depends on the continued development of our energy resources in ways that are integrated and environmentally sound. Future development will provide Albertans with tangible benefits and will recognize the responsibilities we shoulder as Canadians and global citizens. Alberta's energy future will respect the need for meaningful engagement of all Albertans, including Aboriginal Albertans. All development will expand and increase our strengths and competitiveness within integrated North American and global markets.

2.4 Desired Outcomes

Exercising resourcefulness and responsibility, we believe that we will be able to achieve the following explicit outcomes:

- Clean energy production.
- Wise energy use.
- Sustained economic prosperity.

Realizing these three central outcomes will put us well within reach of our energy vision. The burning question, of course, is: *How will we do it?* There is more than one answer:

1. We will address the **environmental footprint** of energy.
2. We will investigate and exploit the ways in which we can **add value** to Alberta's energy industry.
3. We will seek to change **energy consumption behaviour.**
4. We will improve our **innovation** including energy technology leadership and development of people.
5. We will enhance the capability of our **electricity system.**
6. We will work to bolster **knowledge and awareness** of and appropriate education on energy issues.
7. We will work to ensure **alignment** of other initiatives, programs, policies, and regulations with this strategy.

Section 3 expands on the three central outcomes. Section 4 builds out these seven explicit levers. Bold government action today will enable Alberta to scribe a self-determined future that will reap immediate and far-reaching benefits, while dramatically improving global goodwill. Albertans will lead, rather than be led.

3.1 Clean Energy Production

Overview

How will we improve energy production practices in Alberta so varied sources can continue to grow and deliver benefits to Albertans?

Perhaps the option talked about most often is the development of more renewable energy—wind, solar, biomass, geothermal and hydro. Alberta has a rich endowment of renewable energy resources that will play an increasingly important role in our energy future. Already Alberta has almost three times the national average of electricity generation capacity from wind power. Biofuels can be produced from agricultural products such as grains and canola and cellulose from plant fibre and switch grass, and forestry waste products such as wood chips and wood waste. While the growth of renewables will be constrained by many factors, including manufacturing capacity and expertise, these energy sources are undeniably cleaner sources of energy than fossil fuels.

Along with growing demands for electricity and to support efforts to reduce greenhouse gas emissions, there has been a renewed interest in nuclear energy in many jurisdictions around the world. While CO_2 is not produced in the consumption of uranium, nuclear-generated energy does carry other issues, including concerns around safety, health and the environment. It is because nuclear offers both potential challenges and opportunities that the Alberta government is currently reviewing this issue to determine whether it is an appropriate fit for our province. While the province currently does not have a position on this topic, it has committed to develop one through a process that will involve engagement with the public.

In terms of greening the overall energy supply, neither nuclear nor renewables offer complete answers.

It is true that air, land and water are all affected in the development of fossil fuels. CO_2 and other gases are emitted in their recovery and processing. But fossil fuels do remain plentiful globally and their infrastructure is up and running. By 2030, the world is expected to be consuming more than 50% more energy than it consumes today. Most sources estimate that oil, gas and coal will still constitute the vast bulk of global energy supply by mid-century.

Should Alberta be looking at alternative energy sources? Yes. Should we promote renewables? Again, yes. But the key question for Alberta, in a world that is going to be counting on energy from all sources, is how we can begin to produce and consume fossil fuels in a far cleaner way.

Means already exist to tap the energy within fossil fuels with reduced impact on the environment. They include gasification processes, which reduce the carbon impact of fossil fuels prior to combustion, combined with carbon capture and storage (CCS) to gather CO_2 and sequester it safely. These approaches, however, are expensive and yet to be fully validated. Alberta must apply its innovative talents to advancing and employing these means.

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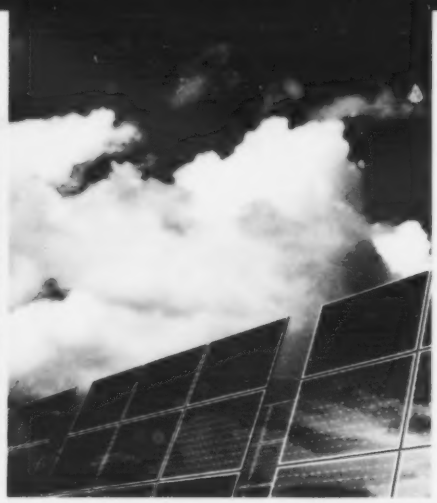
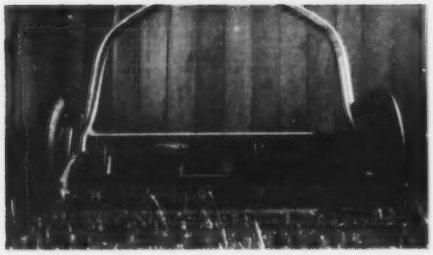


Approach

We will tackle the challenge of cleaning Alberta's energy production in the following ways:

- Invest in development and implementation of gasification technology as well as carbon capture and storage to reduce CO_2 emissions.
- Apply energy and environmental technology leadership to the other environmental issues confronting fossil fuel development, such as water consumption and tailings pond management.
- Incent cleaner industry behaviour by maintaining the Specified Gas Emitters Regulation (which puts in place a price on carbon for large emitters), or a version of it, and increasing this price over time.
- Not only support renewable energy development, but promote a market for its consumption.
- Give close consideration to the prospect of nuclear power and engage Albertans in a discussion of its potential for Alberta.
- Explore and capitalize on synergies available through innovative integration of energy sources, e.g., geothermal or hydropower in the oil sands.
- Continue to carefully manage our environmental footprint by respecting limits determined by a cumulative effects approach.
- Ensure monitoring, aligned regulations and enforcement aimed at achieving sustained cleaner energy production.

Clean energy production is not going to happen overnight. Some of the proposed approaches are long-term. But we recognize the urgency to act soon. We intend to take deliberate steps toward achieving this outcome.



3.2 Wise Energy Use

Overview

While much of Alberta's energy policy has focused on supply, increasingly we need to integrate the "demand side" in our thinking. The demand side spans a complex range from the choice of energy sources to extract bitumen to household and transportation energy conservation measures. Albertans, as mentioned, are among the highest per-capita energy consumers on the globe. We'd like to set a more appropriate example. Energy resources may need to be consumed, but they should be consumed with emphasis on efficiency, conservation and overall wise use. It is possible for Albertans not only to set the standard in development of its energy sources, but in their consumption.

It is possible for Albertans not only to set the standard in development of its energy sources, but in their consumption.

There are several pragmatic reasons for adopting a strategic approach to the consumption of energy:

- Energy that companies and individuals do not consume is energy that can be upgraded or sold to further benefit Alberta. So "saving" energy not only reduces heating or lighting costs, but offers the potential to create more wealth for Albertans.
- The reality is that most CO_2 emissions are created in the consumption, not the development, of energy. Reducing per-capita consumption offers real possibilities to help meet emissions targets, even in Alberta where energy development dominates.
- There is real hope that a combination of wise energy use and appropriate technology development can begin to decouple emissions from energy consumption. In other words, we can begin to create a world where the carbon associated with our living patterns is captured and sequestered, or not even produced in the first place.
- We acknowledge that the energy we use in developing our resources is under increasing international scrutiny and has the potential to impact our province's ability to market our products to other jurisdictions.

Approach

We will accomplish wiser energy use in this province in the following ways:

- Work to convey knowledge and awareness—including the costs and benefits—of energy consumption and emissions.
- Actively support the replacement of natural gas as an oil sands input fuel with a variety of potential substitutes including synthetic gas from the bottom of the bitumen barrel.
- Support adoption of energy conservation measures in buildings and an energy-conscious approach to urban planning.
- Work with Canada to establish vehicle emission/efficiency guidelines.
- Invest in projects that provide cleaner options to consumers, including mass transit.
- Work to ensure vulnerable Albertans and sectors can cope with high energy costs in the future, while not confusing market signals for conservation.
- Support upgrades to the electricity system that will increase its capacity, make it more robust and enable Albertans to make better use of it.
- Support through planning, technology and education the realization of greater efficiency in the production, conversion and consumption of energy.

Wise energy use is within our reach. It is the right thing to do, and the world is watching Alberta. Champions of energy production, Albertans can also set the standard in its consumption.

3.3 Sustained Economic Prosperity

Overview

Tackling the environmental and other challenges facing energy is seen by some as a "price we have to pay" to continue to grow. We accept the concept of cost. Introducing cleaner ways to produce energy will require strategic investment, some of which has already begun. However, this is not all about emptying our pocket books. The future also represents a significant economic proposition to Alberta. There will be plenty of opportunities for revenue generation and, more broadly, sustained wealth creation for Albertans. We believe the extra opportunities will more than offset the investments that will be required.

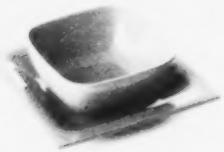
Alberta can take a number of steps to derive greater wealth over the longer term and in a more sustainable way through its energy industry.

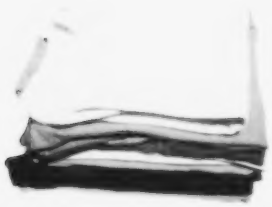
Alberta can take a number of steps to derive greater wealth over the longer term and in a more sustainable way through its energy industry. They includes optimizing the recovery of our energy resources—tapping more of what we are currently leaving in the ground, developing our substantial unconventional gas (coalbed methane, shale gas, tight sands) and reaching our oil sands resource potential. They include broadening the markets for our energy resources. They include the development and effective export of energy "know-how"—profitably sharing our solutions with the rest of the world. They also encompass the concept of "value-added"—taking our commodities farther along the value chain than we currently do.

The Province of Alberta and its oil, gas and petrochemicals industries have excelled in value-added development of Alberta's energy resources, particularly conventional oil and gas. Alberta has a major refining industry along "refinery row," the world's largest ethane-based petrochemical facility at Joffre, and other major petrochemical facilities in the Fort Saskatchewan region.

Most of the bitumen produced in Alberta is upgraded here, and some of that is further refined into higher-value products in our province. However, as the production of bitumen from the oil sands increases, there is further potential for value-added development in Alberta.

Value-added involves producing higher-value products from raw resources, rather than selling it at the first marketable point. This kind of development provides numerous benefits for the province—for example, new upgraders and refineries mean new, long-term jobs and tax revenues on top of the royalties the province already receives for the resources.





Getting the most value from Alberta resources requires striking a balance. Alberta does not have the capacity or the markets to turn all of its bitumen into diesel fuel or plastics. The province always has, and will continue, to try and obtain the best overall value for Albertans through the sale of a combination of products—everything from diluted bitumen to synthetic crude oil, to refined products and petrochemicals.

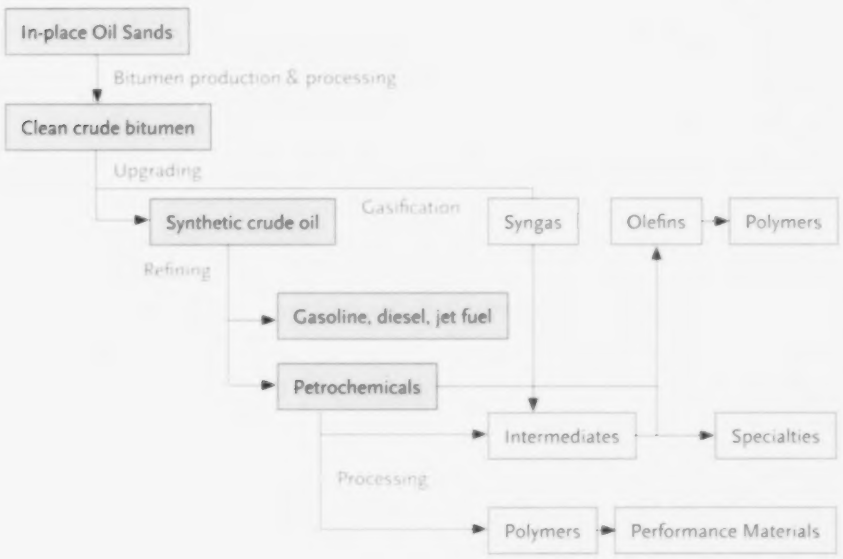
A strategy to maximize the value of Alberta's resources will include a portfolio of sales that get the best from all markets including bitumen markets, synthetic oil markets and petroleum product markets. To some extent, it is the same strategy individuals use in developing their own personal investment portfolios. Variety can create and maintain opportunities for higher returns, while helping to decrease risk.

In addition, when other markets make plans and investments to receive heavier oil as part of their long-term supply, the demand for Alberta's bitumen will grow, and so too will prices. Meeting that demand can, in turn, increase the royalty value the province receives from bitumen.

Alberta can add economic value through resource upgrading, reprocessing, manufacturing and adding knowledge to increase the value of products leaving Alberta. The need to curb emissions in the energy value chain is also a potential impetus to value-adding activity: if we can strategically plan and integrate the processing, upgrading and refining of our energy feedstocks, we will be able to more economically capture and store CO_2 than similar developments located in other jurisdictions. This provides a comparative advantage to Alberta.

The bottom line is that Albertans can ultimately realize a much greater and sustained value from their resources. Strategic steps beginning now will ensure that the "net present value" of our energy resources is maximized over the long term.

Hydrocarbon value chain



There are more than 3,500 products derived at least partly from petroleum.

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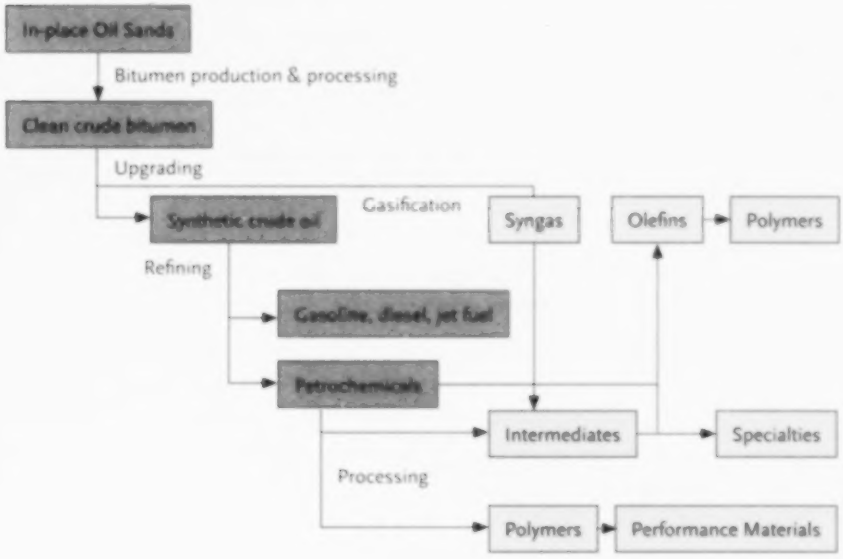
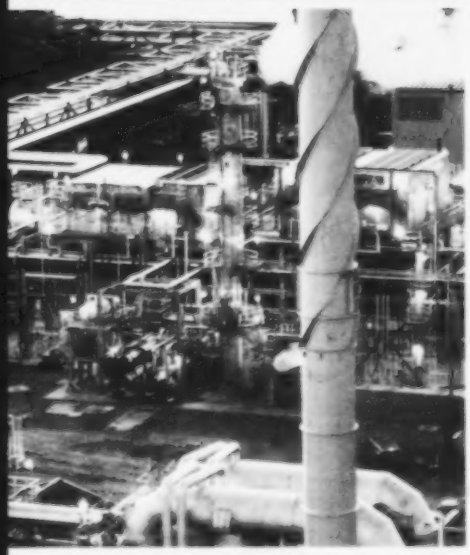
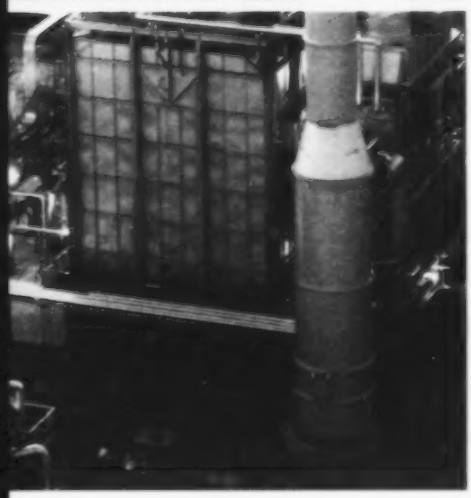


Approach

We will address the challenge of sustaining Alberta's economic prosperity in the following ways:

- Seek development of a world-class hydrocarbon processing cluster in Alberta in order to capitalize on advantages offered through feed stocks, footprint, synergies, transportation, logistics and market access.
- Invest in energy technology that will facilitate integrated approaches, value-added solutions to our challenges, including gasification and carbon capture and storage.
- Aggressively seek optimization of our current resource base including investments to improve basin productivity and the development of unconventional gas resources.
- Seek innovative application of energy production from sources other than fossil fuels in order to complement and enhance the goal of clean fossil fuel development.
- Develop a higher capacity and more robust electricity system for the province that enables us to take better advantage of opportunities technology presents us.
- Strive to broaden our energy industry's global customer base and balance its overall markets to ensure best value for our products and services.
- Create policy that provides the long-term certainty required to attract sustained private investment and highly qualified people.
- Promote the export of our energy and environmental technology know-how.
- Create a better understanding among stakeholders, including energy customers within and beyond our boundaries, of our efforts to manage the environmental footprint of energy development.





Site Supervision

4. Levers

Levers are the tools we will employ to enable the achievement of our three central outcomes and, therefore, the overall energy vision of Alberta. There are many actions to take, but these are the main ones. They include:

- Address Environmental Footprint
  - Careful management of our environmental footprint: land, water and air.
  - Ensure an integrated approach to development of energy resources.
- Add Value
  - Support for the development of a world-class hydrocarbon processing cluster integrated with oil sands production, energy consumption and carbon capture.
  - Cultivation of markets, of industry participants and of highly qualified people.
  - Support for the optimization of basin resources.
  - Support for alternative and renewable energy development.
- Change Energy Consumption Behaviour
  - Development and implementation of energy conservation measures.
- Innovate
  - Energy technology leadership including gasification and carbon capture and storage.
  - Investment in the development of Alberta's next generation of energy professionals.
- Enhance Electricity
  - Electricity system capability.
- Bolster Knowledge and Awareness
  - Knowledge and awareness of energy issues for Albertans.
  - Understanding by others of the approaches we are taking toward clean, green energy.
  - Input of energy information to the education system.
- Ensure Alignment
  - Alignment with related provincial and federal initiatives.
  - Changes to ensure policy, regulatory, and institutional alignment with the energy strategy.

4.1 Address Environmental Footprint

Manage Land, Air and Water

Alberta is resolved to manage the cumulative environmental effects of development. In this respect, the government will:

- Utilize regional plans developed under the Land Use Framework to assess the cumulative effects of development on the environment and to set the limits or thresholds that will guide development decisions. The balance between development and environmental protection—the limits or thresholds at a regional scale—will be set by Government.
- Ensure that regulatory agencies and decision-makers respect Government-approved limits or thresholds when making individual project decisions.
- Update and adapt regional plans as the needs of the province change.

The Land Use Framework will be critical to the achievement of Alberta's cumulative effects approach. Monitoring and managing cumulative effects is a mammoth undertaking, but it will be enabled by integrated and comprehensive information on resource management. Alberta already has a solid position in geomatics[4]—thanks largely to its connection to oil and gas—and we have policy supportive of sustainable development.

Alberta aspires to be a world leader in providing integrated resource management solutions that contribute value-add to energy, forestry, agriculture, environment and land management and development.

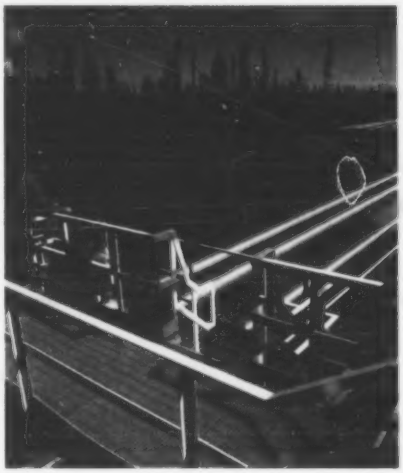
Alberta aspires to be a world leader in providing integrated resource management solutions that contribute value-add to energy, forestry, agriculture, environment and land management and development. Energy has already benefited hugely from data collection in the subsurface (seismic), surface data collection (e.g. geographic information systems incorporating land surveying data) and atmospheric data (e.g. the Clean Air Strategic Alliance's work in reducing flare gas). Over the period spanned by this energy strategy, geomatics advancements will enable us to collect, organize and understand unimagined amounts of data—advancing cumulative effects assessment.

The Capital Region—encompassing the Industrial Heartland area—is the first Alberta region in which the cumulative effects management approach will be modeled. A series of comprehensive targets, outcomes and actions have been set for the region to protect the air, land and water. These targets and outcomes are specifically designed to address environmental and growth pressures from the pace of development in the region and would provide a greater level of certainty for future developers to plan their investments.

The following section deals with the development and deployment of technologies aimed at minimizing the environmental footprint of energy. We should not limit our efforts to new technologies and major new capital projects, of course. There is considerable headway to be made in deploying current technologies such as amine scrubbing[5] to reduce emissions from existing facilities such as power plants and oil refineries.

4 Geomatics is the gathering of information related to the earth's surface and the mapping, analysis, and interpretation of that data.
5 Amine scrubbing is a post-combustion process that uses a solvent to capture emissions from fossil fuels.

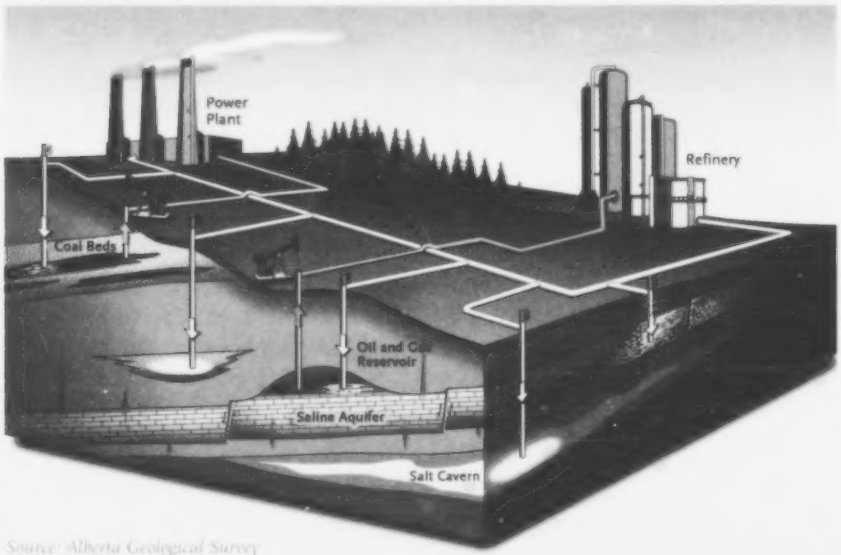
Integrated and Long-Term Energy Development



Gasification and carbon capture and storage (CCS) are key technology components to realizing the commercial viability of clean fossil fuels. Alberta has much to gain from aggressively pursuing the clean gasification of feed stocks such as asphaltenes (bitumen bottoms), petroleum coke, biomass, waste and coal. Our coal reserves are abundant, while bitumen bottoms and petroleum coke are major, low-value byproducts of oil sands production. If we can employ technology to transform these feed stocks to synthesis gas (syngas) and other valuable products (heat, electricity and petrochemical feedstocks), while sequestering the resulting carbon, we will address a number of challenges:

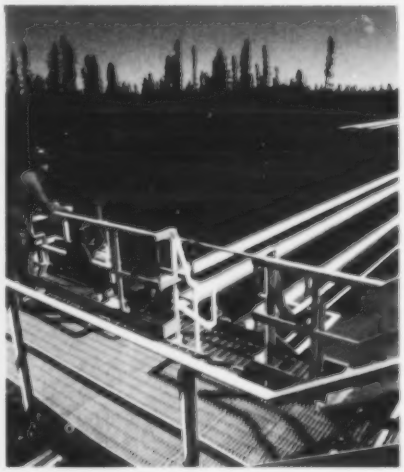
- We will burn the syngas to create clean electricity.
- We will constructively and responsibly use what will be huge and growing stockpiles of bitumen bottoms and petroleum coke.
- We will divert valuable and exportable natural gas from the in-situ bitumen extraction and upgrading process.
- We will promote and encourage sustainable and highly economic upgrading and refining industries.
- We will add value easily to high-carbon, low-value materials through syngas to derive a wide variety of useful and valuable petrochemicals – launching a new era of clean, economic petrochemical production.
- We will create economic means to control and capture CO_2 emissions for subsequent sequestration.

CO_2 Geological Sequestration



Source: Alberta Geological Survey

Integrated and Long-Term Energy Development



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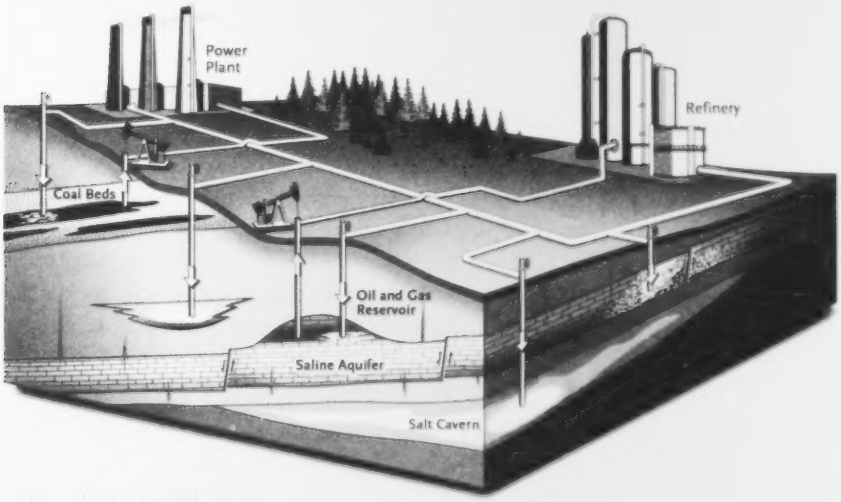


Representations to government from industry experts suggest that Alberta has a unique opportunity to develop a leading petrochemical cluster based on bitumen products and byproducts including gasification of feedstock extracted from bitumen during upgrading and refining. Bitumen piped from northeast Alberta could be processed in a concentrated industrial complex (such as the Industrial Heartland), and diluent could be piped back to the oil sands to complete a closed loop. Captured CO_2 could be sequestered. Excess energy could be placed on the grid. An integrated system such as this is more efficient and self-contained—it not only reduces the environmental footprint of its operations, but rewards Albertans with the benefits of value-added activities.

Efforts toward technically and commercially feasible gasification processes are under way through many organizations including the Alberta Energy Research Institute (AERI). We need to complement these efforts with policy that progressively reduces the use of natural gas in the oil sands, and with the launch of an ongoing research initiative that targets gasification with CCS, emphasizing their demonstration and deployment.

Alberta has made a move into CCS with our announcement of public support for a projected three to five projects expected to store about five million tonnes of CO_2 a year by 2015. CCS employed in enhanced oil recovery (EOR) and possibly enhanced gas recovery (EGR) promises an early and not insubstantial economic win. For example, research shows that between 500 million and two billion barrels of conventional oil may be recoverable using EOR in Alberta. Industry is already actively pursuing this course of action.

Alberta has made a move into CCS... Our success with this technology platform will ultimately be a valued and exportable resource unto itself.

To make CCS work for Alberta, there is a need for a clarity-creating CCS "rulebook" addressing long-term liability (for the risk of escape of CO_2), ownership of geological reservoir pore space (including the rights to displace water from the pore space), and project approval (i.e. how to obtain the right to inject and store CO_2). It is the government's intention to address questions including project life requirements, post-closure requirements, development of a monitoring, measurement and verification program, and a longer term management framework. The CCS Development Council is currently developing a blueprint of the most expedient approaches to making the broad-based application of CCS a reality in both the short and long term.

Ultimately, if mastery of the gasification-with-CCS cycle can put our abundant feed stocks into the clean energy category, it will be a boon to this province and to the rest of the world. Alberta's success with this technology platform will ultimately be a valued and exportable resource unto itself.

Encourage Complementary Energy Sources

It is in Alberta's interests to be an aggressive early adopter of renewable energy, for the following reasons:

- The synergistic relationship of renewables with fossil fuel development may facilitate cleaner production of Alberta's significant hydrocarbon deposits (e.g. hydroelectric power contributing to bitumen extraction).

- We already have a solid position as a host for wind energy, biofuels and hydroelectric production, and we may be able to leverage comparative natural advantages in solar, geothermal energy and biomass.
- Renewables can play a role in improving the redundancy, reliability and security of our overall energy supply.
- Opportunities in renewables such as micro-generation pique Albertans' entrepreneurial talents.

Expanding the development of bioenergy will diversify the energy basket with clean alternatives. Bioenergy clusters that facilitate waste to energy conversion will provide significant carbon reduction, a positive energy balance, community development and environmental sustainability. Several development opportunities have been proposed throughout the province to leverage municipal, farm and forestry infrastructure with emerging bioenergy technologies. Going forward Alberta will introduce a renewable fuels standard, consistent with those adopted by Canada and other provinces, to begin the "greening" of transportation fuels.

Electricity generation from renewable resources will be supported by investments in our electrical infrastructure, conservation initiatives, and the new Micro-Generation Policy that will allow Albertans to generate their own environmentally friendly electricity and receive credit for any power they don't use and send into the electricity grid.

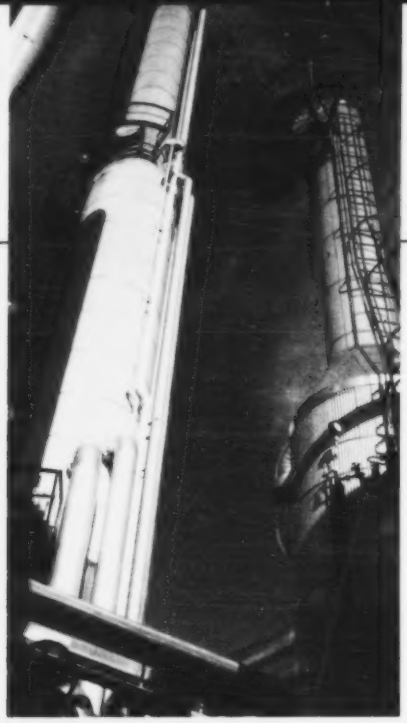
What will create truly ideal conditions for renewable energy will be the rising price of fossil fuels over the long-term and increasing carbon charges in a carbon constrained world.

4.2 Add Value

Optimize Basin Productivity

Natural gas and conventional oil production in Alberta will deliver continuing and expanding benefits in the future if we invest in these activities appropriately today. *Ramping Up Recovery*, a 2006 investigation into the recoverability of oil and gas in the basin, suggested that in Alberta an incremental 3.6 billion barrels of conventional oil and 18 trillion cubic feet (Tcf) of conventional gas are recoverable simply through more advanced and thorough application of *existing* technologies. These are mere drops in the bucket compared to the recovery of the mammoth oil sands, but they utilize existing infrastructure and they more broadly benefit communities throughout the province, which are important considerations for sustainability.

Ramping Up Recovery did not focus on unconventional gas, which is probably the principal remaining resource in the basin with massive amounts potentially recoverable. Production of one type of unconventional gas—natural gas from coal (coal-bed methane)—took off three years ago. Advancements in completion technologies in the last 24 months have transformed the economics of the development of another unconventional variety: shale gas. Overall, production of unconventional gas in Canada is still in its early stages, but we are following a path



well paved by the U.S. in this respect. It is anticipated that by 2025, unconventional gas will account for about 80% of new Canadian drilling and 50% of total Canadian gas production. Early signals of this trend include decisions by key Canadian producers to place their corporate focus on the development of unconventional gas.

Continued gas production will supply our petrochemical industry with natural gas liquids that are critical to its existence. Continued conventional oil production generates the pentanes and condensate that serve as diluent to facilitate bitumen's flow through pipelines. In turn, the CO_2 being captured through bitumen upgrading and refining can be piped to where it is needed and injected to enhance oil and gas recovery. Natural gas, being not only the cleanest fossil fuel, but increasingly recoverable through technology advancements, is assured of playing a substantial role in tomorrow's energy mix. Sustained activity across the basin—not just in the oil sands areas—will guarantee jobs and deliver a continued boost to rural areas. We have extremely useful assets already in place: capital, skills and facilities including one of the most extensive networks of pipelines in the world—the Alberta Hub. Continuing to tap these resources will not entail any significant expansion in the environmental footprint.

The question for Alberta is how to create the conditions to motivate sustained activity in the basin. The 2006 study advocated the creation of a "public super database" featuring tighter integration of data types. It also suggested that infrastructure such as a CO_2 backbone be put into place and that reservoir characterization be carried out much more aggressively. We support the conclusions of *Ramping Up Recovery*. Alberta will:

- Invest in improving its integrated data and knowledge base—a "public super database"—and use this to inform not only petroleum recovery, but to inject fact-based arguments into debates over land and water use.
- Partner with industry to support innovation in the province's already well-advanced geomatics clusters.
- Identify key plays with application for CO_2 floods (e.g., Pembina, Redwater and others) and mandate unitization to facilitate CO_2-based enhanced recovery regimes.
- Ensure continued resource access in the face of increasing population density, to facilitate commingling and more concentrated well spacing where appropriate, to address shallow rights reversion, and to adopt further measures to creatively encourage and/or require greater recovery within economically reasonable bounds.
- Consider royalty structures to allow the development of marginal resources and promote best use of current and new technologies.
- Increase enforcement as a means of: protecting the environment and the industry; leveling the playing field for those who adhere to the rules; and sending a signal that we are acting in the public best interest.

Extend Our Role Along the Value Chain

Alberta needs to add value to its products and exports and expand its economy by encouraging the further processing of bitumen, oil, natural gas, and coal in Alberta to increase jobs, diversify the economy and raise tax revenues for Albertans. Value-added activity in the energy industry could occur across Alberta or adjacent jurisdictions. It would include activities such as the Joffre petrochemical complex, the Lloydminster heavy oil upgrader, upgrading and some levels of refining in Fort McMurray, and further development in industrial complexes northeast of Edmonton, the Capital Region including the Industrial Heartland.

Alberta has some prime opportunities to encourage the further development of world-class integrated clusters.

Alberta has some prime opportunities to encourage the further development of world-class integrated clusters that could include upgraders, refineries and associated petrochemical and chemical industries (eco-industrial complexes). An integrated cluster of processing facilities also supports the overall goal of clean energy development (see discussion of gasification and CCS, Section 4.1). Development of an integrated cluster can also reduce the overall environmental impact through reduced footprint, less waste produced, lower total impact on air quality (fuel efficiencies), more effective placement of emergency services and infrastructure, reduced or shared water use, and more effective waste water management.

Work done by the Hydrocarbon Upgrading Task Force identified significant realistic value opportunities in upgrading and refining bitumen to transportation fuels and other products, and providing petrochemical feed stock. The Task Force identified, as an "aspirational goal," an ultimate portfolio mix of one-third bitumen sales, one-third synthetic crude oil sales, and one-third the sales of finished products and petrochemicals. Further work needs to be done to determine the optimum mix as future markets develop.

Steps Alberta will take include:

- Creation of a government-led organization dedicated to planning for and developing policy analysis and options for upgrading/refining/chemical clusters in Alberta.
- Identification of, and shared investment in the development of major corridors for future pipelines, road, electrical transmission and other requirements for such a cluster.
- Assessment of optimum targets for bitumen allocation (direct export/ upgrading and refining/petrochemical feedstock).

Diversify Our Markets

The fundamentals of industry structure tell us that it is wiser to cultivate a stable of customers than remain reliant on a singular customer. Energy demand in the U.S. has grown dramatically, but the development of supplementary markets accessible via tidewater would allow us to better manage risk as well as command greater bargaining power, thus increasing the likelihood we will be paid full value for our exports over the long haul.

Government prefers to collaborate with industry to develop a comprehensive strategy for more aggressive global marketing of Alberta's energy to achieve a more diverse and resilient customer base.

Sell More Than Products

Many parts of the world are encountering challenges similar to Alberta's as they confront the imperative to clean up fossil fuel development. Alberta can achieve greater leverage on our investment dollar by sharing the solutions we develop here. Alberta will lend greater strategic assistance to achieving the development of markets for its energy-environment solutions, including technologies, processes and services.

4.3 Change Energy Consumption Behaviour

Encourage Energy Efficiency and Conservation

Energy efficiency and conservation will play a significant role in the future competitiveness of industry and attractiveness of the economic and social climate in Alberta. While such measures have met with mixed success in other jurisdictions, their potential remains substantial. Strategic support for increased efficiency and conservation paired with carbon charges (see next section) will be one of Alberta's most critical levers in meeting the challenges that the future will pose.

Alberta will develop an over-arching policy framework to increase energy efficiency and conservation in all sectors within Alberta. The framework will include, among other things, government action in the following areas:

- **Improve measurement.** We will promote smart metering, smart grids and better consumption measurement in order to help Albertans better understand their consumption patterns and incent greener responses. We will direct the migration of electrical meters to Advanced Metering Infrastructure.
- **Green up transportation.** The province recently announced a $2-billion program for green transit. Government will also examine the goals for energy efficiency of the government vehicle fleet and work with Canada to assess vehicle emission standards in the province.
- **Improve building design.** We will strengthen building codes to produce a smaller environmental footprint and complement increased robustness of the grid. We will also support selected retrofit/renovation programs for existing buildings. We will set an example by requiring all new government-funded

buildings to be silver or gold Leadership in Energy and Environmental Design (LEED) standard.

- **Promote wise urban planning.** It is a necessity to rethink urban planning, especially in the context of urban sprawl and the need to increase density if we are to effectively and sustainably reduce energy consumption. Alberta will work with municipal governments to encourage this.

Carbon Charges

A primary impediment to addressing greenhouse gas emissions is the reality that individuals and companies are not faced with the true costs of their actions related to these emissions. Some jurisdictions, including Alberta, have begun to convey carbon price signals to facilitate wiser use of energy and minimize impacts to the environment. Alberta's mechanism targets its largest industrial emitters of greenhouse gases, whereby those failing to meet emissions intensity reduction targets have options including paying $15 per tonne of CO_2 into a fund dedicated to technology development and deployment. This is the right approach because it fills a dual role of raising funds that the province can direct to strategic energy technology solutions, while conveying signals to use energy more wisely.

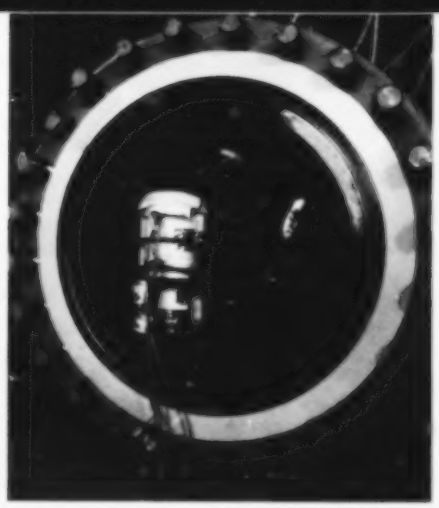
Alberta is wary of the "cap and trade" mechanisms being advocated by others. Their requirements would be onerous and targeted disproportionately at energy producing jurisdictions. Their contribution to physical reduction of greenhouse gases has been questioned and they pose a risk of wealth transfer, trapping us into sending our monies elsewhere, rather than investing them into solving our emissions problems at home.

The issue of carbon emissions thus affects all consumers of energy—all Albertans, not just Alberta's industrial emitters.

Any mechanism going forward to price carbon for industrial emissions must be market-based; it must not redistribute wealth from Alberta; it must not impede our competitiveness (issues of reciprocity, for example, will have to be addressed for exporters); and, funds collected must be directed back into solving our unique energy-environment challenges. Alberta's mechanism should be designed so that it can evolve as needs evolve, and it should be time-limited, with its purpose and impact periodically reviewed.

The reality of CO_2 emissions is that most emissions are generated in the consumption, rather than production, of energy. We burn fuel in our vehicles; we burn fuel to heat and light our homes and buildings. The issue of carbon emissions thus affects all consumers of energy—all Albertans, not just Alberta's industrial emitters. While Alberta is vigorously pursuing solutions to reduce our industrial emissions, such as Carbon Capture and Storage, we must not be lulled into thinking this is just an energy production problem.

Alberta will not introduce a carbon tax on consumers of energy. These taxes have questionable results on reducing actual emissions. We do support increasing energy conservation standards and ensuring in future that our vehicles are more efficient, and our homes, buildings and communities use less energy. This may cost us more in the short term, but we'll also be assured that our energy efficiency will increase, improving our ability to cope with higher energy prices in future.



Alberta Research Council

Similar to our approach to industrial emissions, our costs will be targeted at real solutions that position us for the future, rather than redistributing wealth.

Going forward, Alberta will:

- Review its emissions targets and carbon charges for large industrial facilities, and ensure that appropriate increases are made to both, while being mindful of our competitiveness.
- Work with Canada to ensure a clear compliance path for large industrial facilities with the regulatory frameworks in place and proposed.
- Work with Canada to ensure that approaches to transportation fuels account for the full life-cycle emissions from production site to the tailpipe, and that vehicle emission standards are improved.
- Strengthen building codes to ensure new housing and building stock being put in place for the future is as efficient as possible.
- Work to ensure that the most vulnerable Albertans and sectors are able to afford the cost of energy now and in the future. At the same time, ensuring that market price signals that can help promote consumer choices to conserve energy are not distorted by programs such as the Natural Gas Rebate Program.

Alberta's energy future relies heavily on technology.

Alberta Research Council

4.4 Innovate

Develop and Deploy Technology

Clearly, the path to optimizing Alberta's energy future relies heavily on technology. Many of the technologies that will enable our energy future are already proven and simply require more deliberate deployment. Some of the technologies remain to be proven, while others have yet to be imagined. Technology commercialization is not a straightforward business here or elsewhere. As such, realizing our energy vision will depend on our concerted efforts to address the full curve of technology development, from conception to commercial deployment.

We need a clean solution for energy production.

We have referred to an AOSTRA-scale effort in order to support the proposed gasification-CCS platform. AOSTRA helped Alberta unlock the potential of the oil sands in the first place. Now, we need a clean solution for energy production. Alberta will increase investment in research, development, demonstration and deployment in sustainable energy technology. The funds will *not* be proportionately distributed to existing granting agencies. The bulk will be dedicated to a focused, consolidated, coordinated initiative—a one-window approach with publicly established goals inviting industry capital and guidance.

This effort, perhaps organized as a centre supporting clean energy production, will employ best practices in governance and incorporate rigorous, arm's-length evaluation of outcomes. It will not try to be all things to all people, keeping a tight focus on gasification-CCS and directly related questions (including regulatory, engineering and business applications supporting clean energy).

The centre will coordinate activities along that curve, but it would allocate resources to different parties depending on their distinct competencies (i.e., universities for fundamental research; applied research facilities for early scale-up work). Its particular direct involvement will be in pilot plants, demonstration projects, which offer potential to advance new generation technology and ideas. Both industry and government recognize the value of launching small, but commercial-scale, pilots to prove out the more massive investments that may follow.

In this way, Alberta can expect progress not only on the gasification-CCS file that will drive the clean energy centre, but in a host of other important areas, including:

- Unconventional gas development.
- Water use efficiency, groundwater protection and beneficial re-use, water storage, tailing pond management/use.

- Integrated resource management.
- Reservoir characterization facilitating enhanced oil and gas recovery.
- Hydrogen.
- Petrochemicals.
- Renewables including geothermal and biomass waste that, in an integrated setting, may enhance clean fossil fuel production.

It is fruitless to attempt global leadership in all facets of energy research. Technologies will emerge from other parts of the globe with direct applicability to the challenges facing Alberta. Areas in which we may fill a role as early adopters include electrical storage, wind generation, geothermal, small-scale nuclear and biofuel production.

New ideas for old technologies could involve exploring something as innovative as developing strategic reserves of critical resources and products within Alberta. Alberta has a significant natural strategic reserve of the raw resources right now, but an assessment of strategic quantities of intermediate and final products, such as transportation fuels, could also be considered to help avoid the occasional physical and market fluctuations in supply caused by unexpected shutdowns of refineries or other operational issues.

The key ingredient to innovation is people.

Nurture an Innovation Culture

The feature that will sustain our innovation efforts is an "innovation culture." Alberta has shown determination to develop a high-tech business environment through its recent announcement of an action plan called *Bringing Technology to Market*. It is critical to nurture an integrated innovation supply chain, or the economic benefits promised by research and development investments will continue to languish.

Develop the People Resource

Perhaps the key ingredient to innovation is people; as an emerging global energy hub, the only resources we are actually short on are human resources. Adam Smith's three "component parts of price" were land, labour and capital stock—capital and land tend not to be in short supply here in Alberta. The energy industry has suffered in the last 20 years because youth, buying into the perception of oil and gas as a sunset industry, chose other paths. Now we are facing a daunting "crew change" as baby boomers leave the work force. Alberta needs to scale up its strategies so that we can attract not only our most promising youth, but the best expertise available globally. In a world of highly uncertain future energy and environment challenges, one of the best investments lies in developing the people with the capability of meeting those challenges (and seizing the opportunities associated with them).

4.5 Enhance Electricity

Strengthen Transmission

Electricity is a facilitator of economic development in Alberta. To this end a robust, reliable and efficient electricity transmission system is required. Transmission infrastructure is a public good that must be available in advance of need, enable addition of new generation and be capable of meeting long-term load growth throughout the province.

Growing our transmission system is urgent. No significant new upgrades to the transmission system have been built in more than 20 years in Alberta. The current transmission system has not kept pace with Alberta's growing economy. The existing system is congested, ageing, and results in significant wasted electricity as a result of large system losses.

An uncongested transmission system with sufficient intertie capacity to other jurisdictions is required to encourage the development of new electricity generation. By ensuring development of a robust transmission system, generation developers will know that they will be able to efficiently move their product to market. In turn, they will have confidence to develop new generation ensuring an adequate, reliable supply of electricity for Albertans.

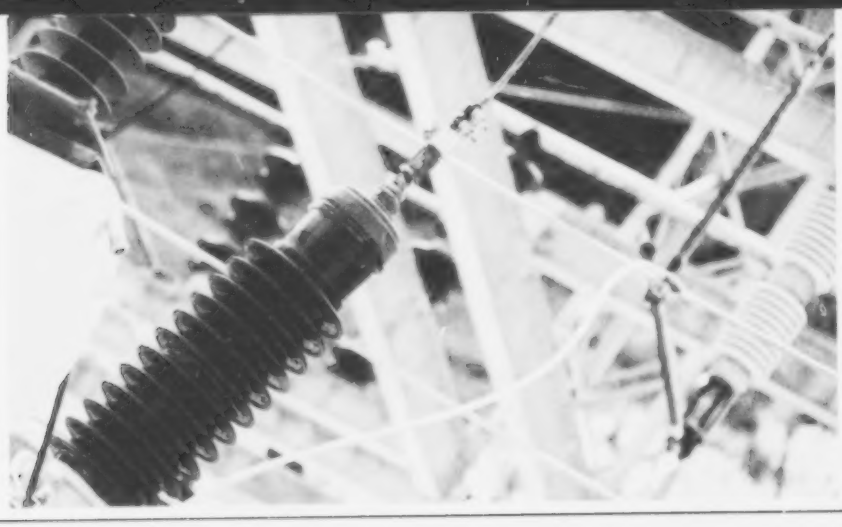
Alberta's electricity prices are based on the principles of supply and demand in a market context. Vibrant markets depend on the ability of many suppliers to reach many buyers. Thus, a robust transmission system is essential to ensure an adequate supply of competitively priced electricity for Albertans.

Until transmission is improved, potential renewable or low emission electricity generation in Alberta will remain location-constrained. There are hydroelectric resources in the northern area of the province, wind and solar in the south, and biomass in the northwest. Optimal use of power from these sources depends on our ability to bring it to where it is needed.

There are additional arguments for the improvement of our electricity system:

- If we can use gasification-with-CCS to burn bitumen bottoms, coke, biomass, waste and coal cleanly, electricity will become a province-wide medium for clean energy, applicable not only to lighting and appliances, but home heating and recharging (should plug-in electric cars rise to prominence). This has the potential to dramatically reduce end-user emissions.
- Lower-cost electricity using these carbon-rich fuels will help make bitumen recovery more economical and reduce dependence on valuable natural gas.
- Robust transmission will support new electric power generation that will underpin future economic growth and support new consumer products such as plug-in electric cars that are fuel-efficient and help reduce end-user emissions.

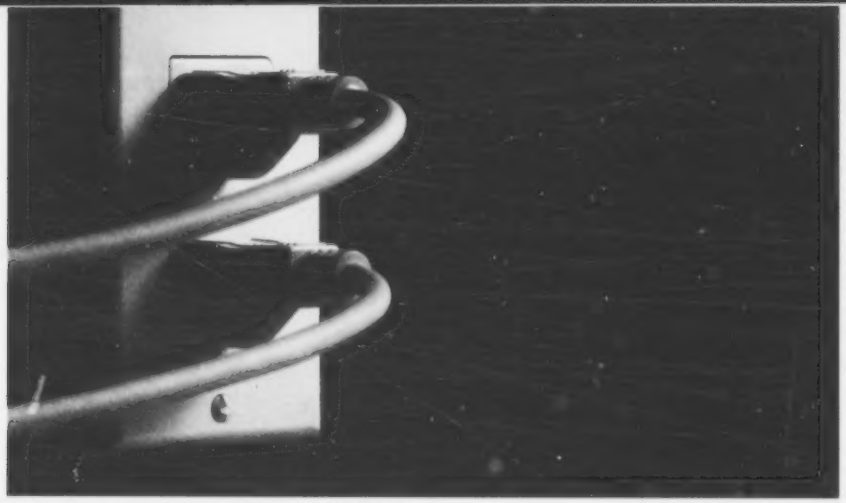
The current transmission system has not kept pace with Alberta's growing economy.

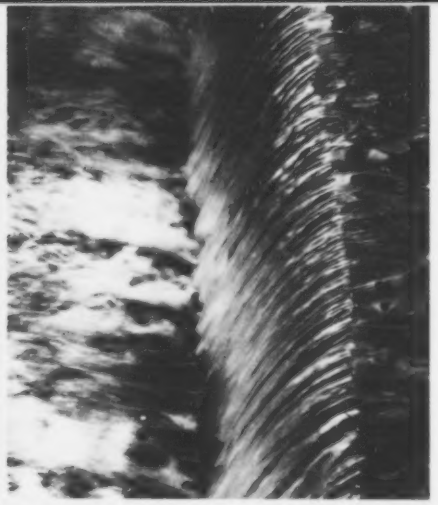


- Advancing new transmission investment will ensure reliable service for Albertans, help drive our clean energy agenda by growing new renewable energy potential, and enhance our ability to serve electricity export markets.
- At its point of use, electricity is one of the most efficient and cleanest forms of energy.
- Since electricity is most commonly generated at large single-point sources, the environmental impacts of its generation are easier to address.

Alberta will take the following steps to strengthen the provincial transmission system:

- Lead the development of a plan for a comprehensive upgrade to the transmission system in Alberta. The plan will identify the requirements, the technical solutions, and the schedules for improving the transmission system in Alberta. Improvements will be sized to accommodate long-term growth and will use, where possible, technology such as high-voltage direct current to maximize efficiency of rights of way and minimize impacts.
- Adopt and implement a policy to build transmission, as part of the Alberta interconnected electricity system, to zones of renewable or low-emission electricity.
- Adopt and implement a policy to build interties to other markets to ensure an adequate supply of electricity to Alberta as well as to facilitate development of additional wind generation.
- Review and streamline the regulatory process for transmission siting. We will ensure that all impacted landowner issues are heard, impacts are mitigated to the extent possible, and that landowners receive fair compensation.
- Assemble multi-use corridors for the siting of future energy and transportation infrastructure.
- Undertake an extensive education and awareness program to inform Albertans of the need and the benefits of a robust, reliable, and efficient transmission system.
- Implement policy and provide financial support for the development and deployment of "smart grid" technology.





Address Distribution Level Challenges

There are opportunities for increased efficiency at the distribution level—where electricity is delivered to the customer. Improvements Alberta will advocate include:

- Enabling online measurement of electricity consumption by all consumers. This will include integration of energy and carbon measurement systems at industrial, commercial and residential levels. Facilitating measurement will empower millions of small decisions to manage the consumption footprint. This will be a substantial contributor in helping Alberta meet its emission reduction targets.
- Reducing regulatory bottlenecks associated with approvals, streamlining permitting for small-scale generation, and ensuring that regulations facilitate less traditional activities such as distributed generation and demand management.
- Periodically reviewing the Micro-Generation Policy to identify enhancements that may more appropriately facilitate small-scale generation as well as efficiency and conservation.

We defer to the market to determine what mix and proportion of energy sources Alberta will ultimately use for electricity, and to what extent electricity will be profitably exported. Assuming that carbon costs continue to rise, and assuming that coal will require gasification-with-CCS, we project that generation sources such as wind, run-of-river hydro, geothermal and biomass will become more competitive, and that renewables' proportion of Alberta's generation will therefore increase. Albeit a hub for clean fossil fuels, Alberta will still set a table that will allow renewable and alternative energy to flourish.

4.6 Bolster Knowledge & Awareness

The energy-environment question has fueled a very public and widespread debate. There is plenty of solid information out there, but lots of misinformation too, and it is getting harder to discern the experts. This debate will not die down in the foreseeable future. Alberta will take part.

Promoting understanding, awareness and education of Alberta's energy issues has numerous benefits, including:

- Providing Albertans of all ages with information about how the province develops and uses energy, our environmental challenges ahead of us and the environmental protection measures that are already in place.

- Promoting a greater understanding of how Alberta's energy sector provides economic stability and benefits to the province.
- Increasing knowledge of how personal accountability, through conservation and efficiency, are essential in promoting the responsible use of energy and addressing global challenges like climate change.
- Providing Albertans with a better basis on which to become involved in discussions around energy development (e.g. transmission siting).
- Developing skilled and trained professionals, who may seek careers in the energy sector.

Here are some of the steps that the province will take:

- We will audit the effectiveness of current communications and public reporting efforts and develop a more comprehensive understanding of Albertans' knowledge of and views on energy-environment issues.
- We will supplement our actions with words: speak out directly to explain our vision and our actions, and to defend them as required. Audiences will include Albertans as well as stakeholders and influential individuals in Canada, U.S. and Europe.
- Alberta will carefully reconcile sources of divergent views. It is clear that a strategy that supports clean fossil fuels will not win all non-government organizations over, but we stand to benefit by productively engaging them.
- We will work within Alberta's education system to facilitate a flow of age-suitable information about the energy industry, its importance and its future.

This document supports significant investment opportunities by government and industry. This investment represents the crossroads of where energy development meets environmental protection to provide long-term economic prosperity for our province. Investing just a little more to deliver Alberta's story on our own terms through well-structured knowledge and awareness efforts will help us secure our prosperous and sustainable energy future.

4.7 Ensure Alignment

Albertans are the main players in their energy future. We are, after all, the principal owners of the resource. We live, however, in an increasingly interconnected world. Energy is pervasive, and its impacts are inseparable from many other activities underway within—and beyond—our boundaries. No longer will it optimally serve Albertans to address energy strictly from a narrow point of view. Alberta's energy strategy must encompass a broader vision and transcend the traditional silos if we are to realize intended outcomes.

This strategy introduces a vision, desired outcomes, and the series of levers available to Alberta to make progress toward its energy future. These levers will be exceptionally effective in that they will "pull in the same direction" toward the desired outcomes and vision. In the same vein, we will work to ensure maximum alignment with other Government of Alberta policies influencing energy outcomes,

such as the *Land-use Framework*, *Water for Life* and *Alberta's Aboriginal Policy Framework*, among others.

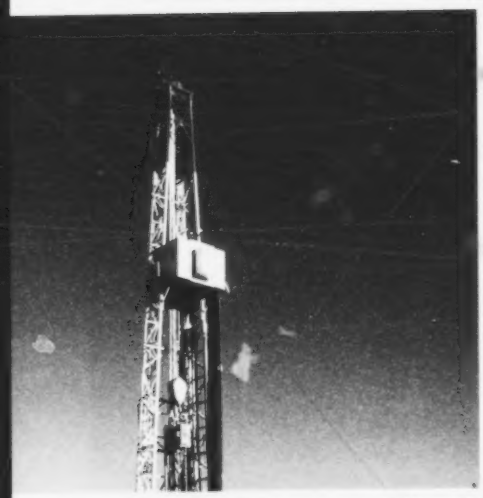
Led by the Department of Energy, many government departments will be directly involved in executing this strategy. It will also encompass the activities of a number of energy agencies, including the Alberta Utilities Commission (AUC), Alberta Energy Research Institute (AERI), the Energy Resources Conservation Board (ERCB), and the Alberta Electric System Operator (AESO).

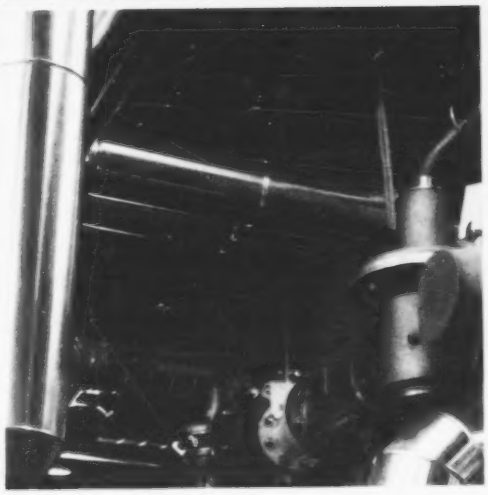
The aboriginal peoples of Alberta have an historic connection to Alberta's land and environment. Alberta recognizes that those First Nations and Métis communities that hold constitutionally protected rights are uniquely positioned to inform land-use planning. The Government of Alberta has the constitutional mandate to manage lands in the province for the benefit of all Albertans. However, the Government of Alberta will continue to meet Alberta's legal duty to consult aboriginal communities whose constitutionally protected rights under section 35 of the Constitution Act, 1982 (Canada) are potentially adversely impacted by development.

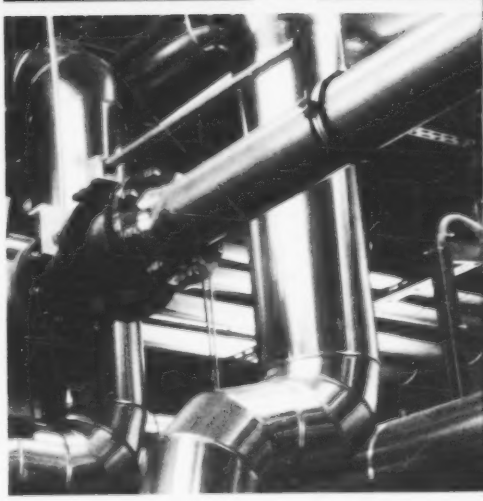
The private sector will play a critical role in implementing this strategy. The private sector raises and directs capital to various aspects of the energy value chain: exploration, production, upgrading, transport, consumption and so on. The market is fluid and free to operate as it sees fit, within the boundaries Albertans establish.

Further, the strategy will influence, and be influenced by, factors beyond our boundaries. Global financial markets have a large bearing on the ability of our companies to raise capital. Many of our energy customers are outside Alberta and a few are outside of North America. Some of the companies that operate within Alberta are headquartered elsewhere. The federal government plays a hand, largely through the National Energy Board, an independent federal agency that "promotes safety and security, environmental protection and efficient energy infrastructure and markets in the Canadian public interest," and also through its initiatives to address climate change. In turn, through income taxes, equalization payments and other means, we are substantial contributors to the national well-being. Dynamics in neighbouring provinces impact us. Human capital migrates readily. Building greater capacity and support across all stakeholders is vital to any strategy.

As Albertans, we are not in control of everything that goes on here, but we do have an important say. We are the principal owner of the resource. We have the levers of this strategy at our disposal. And we will exercise our obligation to influence other factors, both inside and outside Alberta, to ensure to the extent possible that that alignment exists with our path forward. You can expect to see deliberate steps taken in order to achieve productive alignment in policy, regulation, programs and initiatives.





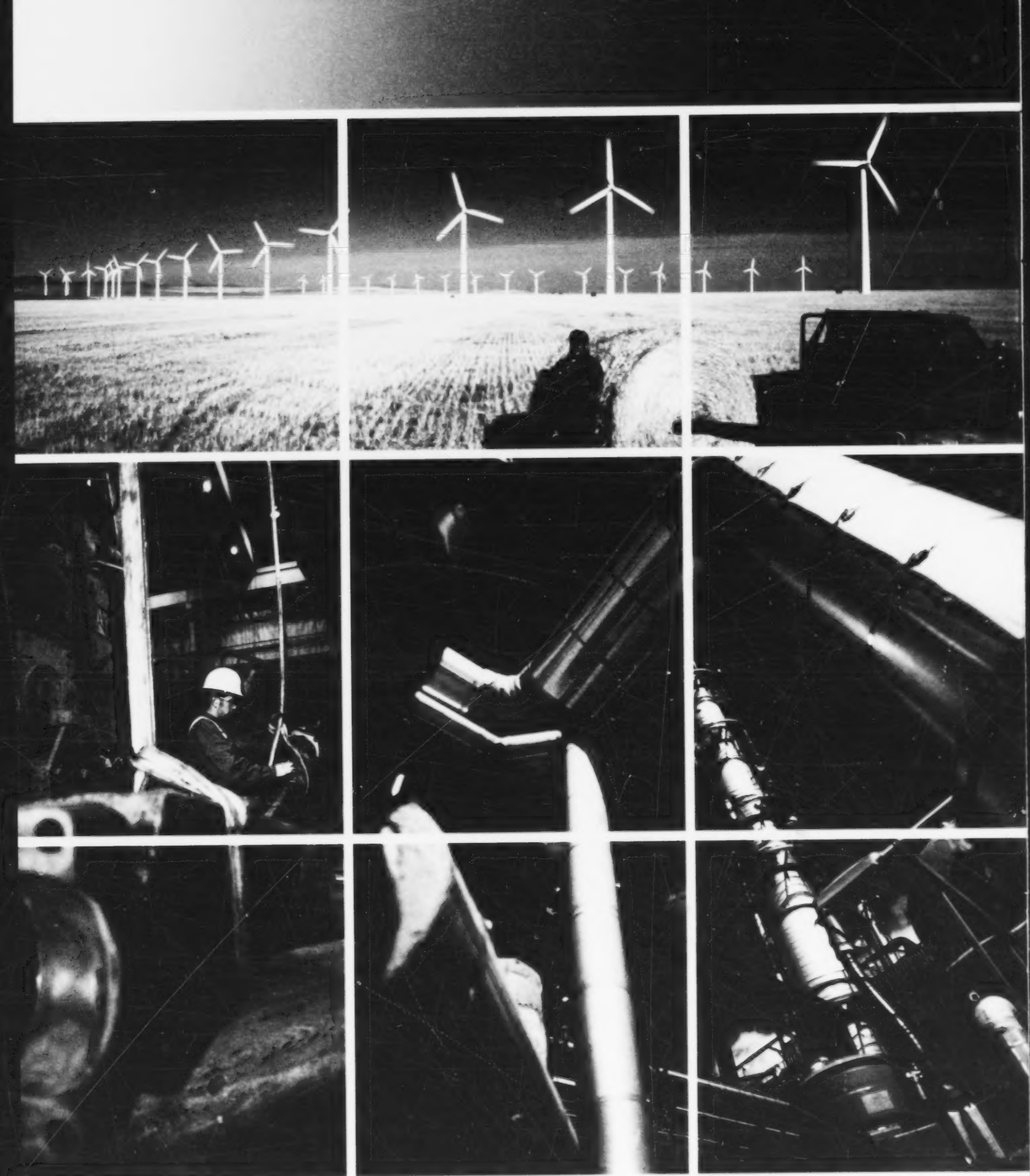


5. Implementation

This strategy sets future policy direction for clean energy production, wise energy use and sustained economic prosperity related to energy. The strategy contains policies and recommendations that will be implemented by the Department of Energy and other departments.

The Government will develop an implementation plan that will include a monitoring process to facilitate the assessment of our progress towards meeting the policy objectives of the strategy and allow us to reassess our objectives and strategies on an ongoing basis as conditions evolve. Taking into account the need for departments to prepare, plan and execute their respective policy recommendations, the implementation plan will incorporate three horizons: short-term, medium-term and long-term. Benchmarks and outcomes will be identified over each horizon.

The Government will prepare an annual report card to communicate progress to Albertans. The report card will also showcase collaboration across government on energy-related matters and it will be incorporated into annual business plan reporting.



6. It is Time

Energy and global financial markets move up and down. We are used to a lot of flux. Economic growth is not a measured climb, but rather a series of ultimately ascending zigs and zags. Over short and medium term horizons, this volatility can tempt course changes.

The ultimate horizon commanded by this strategy is long-term. Global demand for energy is expected to rise over this period, while the world experiences an increasingly constrained supply. Finally, the imperative to have clean energy will continue to climb. Looking beyond today's market lather, we must exert courage to plot the steadfast course that will ultimately serve Albertans best.

Alberta is resourceful. Albertans are responsible. This strategy delineates a trajectory that will best reward us. It defines our energy future and puts Albertans back in the driver's seat.

Alberta is resourceful.
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For more information visit:

www.energy.alberta.ca

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